INSTRUCTIONAL DESIGN STANDARDS FOR ONLINE LEARNING MATERIAL AT SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS

by

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DECLARATION

I, the undersigned, sincerely declare that this dissertation in the form of two publishable manuscripts/published articles submitted in the fulfilment of the requirements in respect of the degree:

Master of Arts in Higher Education Studies

is original and entirely my own work, which I completed under guidance of my supervisors. All sources used have appropriately been acknowledged.

I also certify that this dissertation has not previously been submitted at this or any other faculty or institution.

Isabella du Preez

15 May 2023

Date

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ABSTRACT

The quality of online learning is a contentious topic in higher education, partly because it is elusive in that there is no uniform and concrete definition for it, but also because there are countless standards, principles and instruments as attempts to establish quality in online learning. These quality initiatives, however, emanated mostly from the Global North, with little or no consideration for the challenges online practitioners face in the Global South. What is evident, though, is that more and more pressure is put on online practitioners to ensure and enhance the quality of these learning programmes.

One such group of practitioners are termed instructional designers: responsible for the design and development of online learning material. In Sub-Saharan countries such as South Africa, the instructional design profession is still in its infancy stage, facing a lack of published quality standards from the qualification authorities on the design and development of online learning material. Research on the practices of these instructional designers in the African context is also scant.

As a novice instructional designer at a dual-mode higher education institution, I am responsible for the design and development of online learning material and often find myself questioning whether the material that I am designing can be regarded as effective and engaging. My research question was born out of my own need for contextualised standards specifically for online learning, as I realised that online learning is mostly judged in terms of its online learning material. I therefore posed the following research question: *what standards, relevant to the South African context, can be used to design and develop quality online learning material?* My study is based on the model of writing two interrelated publishable manuscripts, both focusing on two crucial aspects of instructional design, namely pedagogy and visual design.

In the first manuscript (Chapter 2), I followed a qualitative approach to analyse 12 global and local quality guiding documents to distil key pedagogical and visual presentation principles for the design and development of online learning material. This study revealed 19 pedagogical principles, with the most eminent ones being collaboration and the fostering of higher-order thinking skills. Thirteen visual presentation principles were identified, with multi-modality and personalisation being the most prominent. I concluded the first manuscript by proposing a framework depicting key pedagogical and visual presentation

principles for instructional designers to use when they design and develop online learning material.

In the second manuscript (Chapter 3) the aim was to gain insight into how some experienced South African instructional designers view and translate quality when they design and develop online learning material. Following a qualitative research approach, I conducted in-depth interviews with nine experienced instructional designers in South Africa. The interviews revealed that human connectedness is a top priority for South African instructional designers, and they do so by intentionally incorporating a teaching presence and collaborative learning activities. The quality principles mentioned by participants coincide with the community of inquiry model ensuring sound practice from a pedagogical and visual design point of view.

In my final chapter, I intended to respond to the main research question. I used the insights gained in each of the manuscript to synthesise standards relevant to the South African context that can be used to design and develop quality online learning material. I propose a set of standards with comments on how to adapt it for the Southern context where applicable, also alluding to challenges to implement these standards as a means for instructional designers to mitigate and address them proactively. It is my hope that this set of standards can assist novice instructional designers in their design and development practices of online learning material.

Key words: instructional designers, online learning, pedagogical standards, visual presentation standards

LIST OF ACRONYMS

ADDIE	Analysis, design, development, implementation, evaluation
CHE	Council of Higher Education
COI	Community of Inquiry
CP	Cognitive presence
DHET	South African Department of Higher Education and Training
FPI	First principles of instruction
HE	Higher Education
HEIs	Higher Education Institutions
IDs	Instructional Designers
LAs	Learning activities
LMS	Learning management system
NADEOSA	National Association of Distance Education and Open Learning in South Africa
OL	Online Learning
OLM	Online learning material
PVP	Pedagogical and Visual Presentation
SA	South African
SAQA	South African Qualifications Authority
SME	Subject matter expert
SP	Social presence
TP	Teaching presence
QGDs	Quality guiding documents

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1: OVERVIEW

1.1 BACKGROUND AND RATIONALE

The success and survival of institutions, including Higher Education institutions (HEIs), largely depend on its ability to adapt to an ever-changing environment, which is increasingly operating in the digital world as a third space (Sharif & Gisbert, 2015). The global Higher Education (HE) landscape is thus changing rapidly, inter alia due to the extensive rise in the use and availability of the Internet and, with it, the knowledge explosion (Lin, Chen & Lui, 2017). Online learning (OL) (which is also referred to as E-Learning, Web-based learning or digital learning) has become a viable means of providing increased access to HE beyond traditional campus-based borders and has grown exponentially in response to this new environment (Ossiannilsson et al., 2015). Since the outbreak of the worldwide pandemic, COVID-19, it was expected that OL would become even more prominent in future, not only at HEIs, but in all educational spheres.

A plethora of definitions for OL exist. Traditionally, OL was seen as the use of an electronic device such as a computer, smartphone or tablet, to deliver part, or all of the programme's learning content via the Internet (Bari, Djouab & Hoa, 2018; Lin et al., 2017). Today, this definition is extended far beyond this basic conception, since offering flexibility to the student became a prominent driving force in a world-wide endeavour to widen access to HE (Ossiannilsson et al., 2015; Özgür & Koçak, 2016). This resulted in OL having to diversify through mainly three implementation modes, linked with time, location and pace ultimately to outline OL as we know it today (Morrison & Anglin, 2012). These three are 'on-campus', 'near-campus' and 'far-distance' OL.

Morrison and Anglin (2012) explain 'on-campus' OL as learning taking place when students are on campus, attending class physically, but are also required to participate in real-time online activities such as discussion forums. When students attend class at an off-campus hub in real-time by participating, for instance, in a Zoom meeting, it constitutes 'near-campus' OL. 'Far-distance' OL, according to these authors, happens when the lecturer and student are separated from each other in terms of time and location, but still require of students to participate in real-time activities. In all of these, there is a part of the learning that expects of students to be on the same page at the same time (Morrison & Anglin, 2012), thus learning taking place synchronously. All of the abovementioned types of OL can be referred to as

hybrid programmes (Allen & Seaman, 2015) and are often employed by dual-mode HEIs in various degrees (Broadbent, 2017). Indeed, the South African Department of Higher Education and Training (DHET) (2014) refers to "Campus-based", "Blended/Hybrid" and "Remote" as the three modes of provision (see Figure 1 below).

'Far-distance' OL, linking with the DHET's notion of "fully online" (see Figure 1) can, however, also be asynchronous when distance students are expected to complete the programme in their own time and at their own pace ('flexitime'), thus with no real-time interaction (Al-Hosni, 2016). At South African (SA) HEIs, we also refer to such a situation as "distance learning" or "fully online" learning (NADEOSA, 2021:1-2).

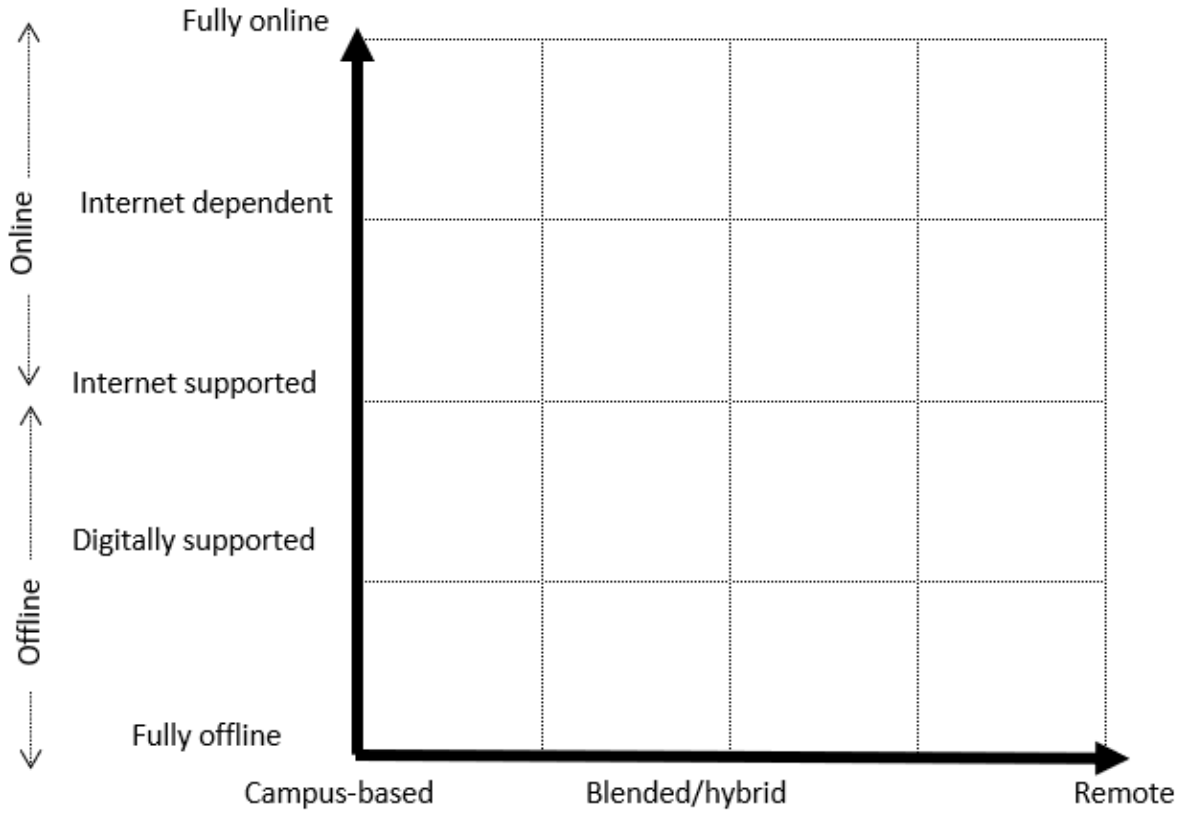

Figure 1-1: Provision grid (DHET, 2014)

Möller (2020) explains the various dynamics of OL when he refers to "blended online learning" as a blend of face-to-face learning with a certain degree of digital support. In Figure 2, he summarises the current SA HE OL situation: a continuum where on the one extreme one has 'pure' face-to-face teaching with no digital support, and on the other hand, a 100% OL with

no face-to-face contact (Möller, 2020). OL can thus be viewed as a conglomeration of the various implementation modes and the degrees thereof (Broadbent, 2017).

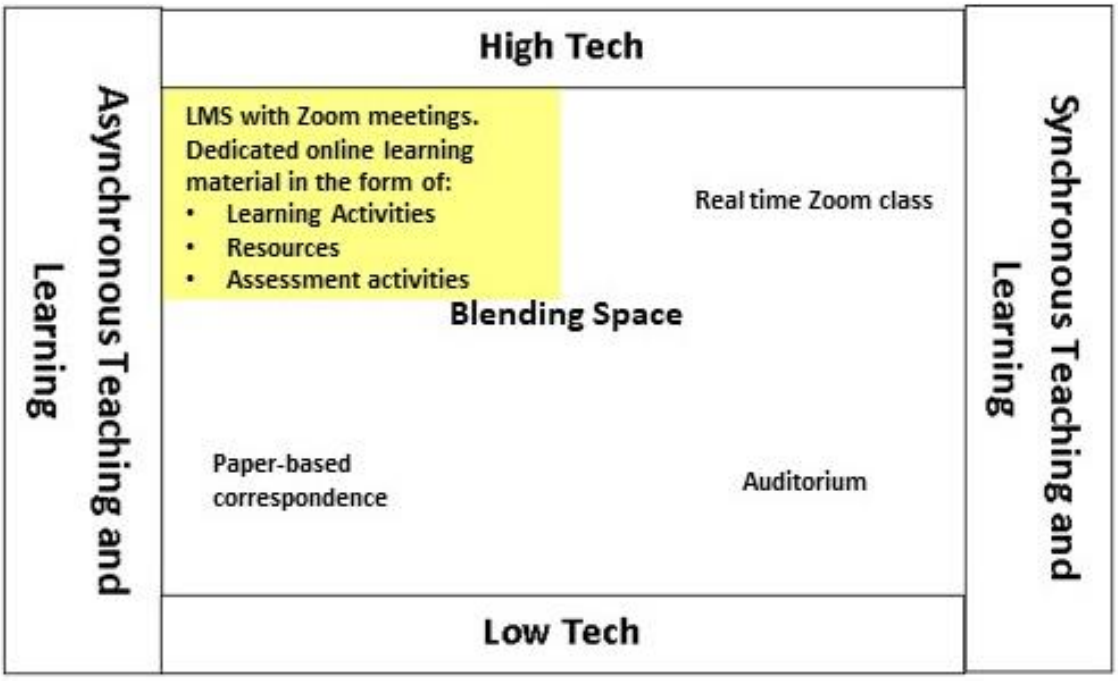

Figure 1-2: Möller's (2020) explanation of online learning as a 'blend' in the South African Higher Education space

For the purposes of this study, my definition of OL resonates in the top left quadrant of Figure 2: namely, OL, providing for 'far-distance' students in a mainly asynchronous mode of delivery (with possible sporadic components of synchronous learning). In this case, 100% of the learning material is delivered 'fully online' via web-based technology, such as a learning management system (LMS) e.g. Moodle, BlackBoard™, and so forth.

In an asynchronous setting where the lecturer is not physically present, online learning material (OLM) carries a massive responsibility, as it substitutes the interactions that typically take place in a classroom: student-instructor, student-content and student-student interactions (Avota, 2018; Morrison & Anglin, 2012). Brown and Green (2016) emphasise that OLM can take on a variety of forms. In the context of this study, I align my definition of OLM with that of Hosie, Schibeci and Backhaus (2005):

- The use and incorporation of digital technology to create *learning activities,* which are ultimately underpinned by *pedagogical principles.* For example, applying the problem-based pedagogical principle by providing a scenario on which the student must answer questions.
- The use and incorporation of digital technology to create *resources* such as text on screen, PDF readings, video, graphics and PowerPoint presentations.

These are discussed in depth in my first publishable manuscript, presented as Chapter 2 (cf. 2.1).

OLM is created through a process, termed instructional design, where the principles of learning and instruction are translated into plans to create effective instructional materials, activities, resources and assessment (Brown & Green, 2016; Sharif & Gisbert, 2015). Instructional design takes time, effort and skill (Morrison & Anglin, 2012) and the designated professionals who are responsible for this are typically known as instructional designers (IDs) (Khalil & Elkhider, 2016; Seel et al., 2017; Sharif & Gisbert, 2015).

Some authors such as Richey, Klein and Tracey (2011) regard the instructional design profession as established, whilst others think of it as yet to be fully recognised by educators (Sharif & Gisbert, 2015). In Global North countries, such as the USA and Canada, the instructional design profession is indeed well established and has been recognised for more than a decade (Sharif & Gisbert, 2015). However, in the Global South HE arena, the profession is still in its infancy stage (Pallitt et al., 2018), and was recently declared by the South African Department of Home Affairs as a critically scarce skill (Department of Home Affairs, 2022).

The majority of professionals responsible for instructional design in the HE context have to rely on short courses, workshops, mentorship and learning through experience, as few opportunities exist for professional training and education in the field of instructional design (Pallitt et al., 2018). This leaves the door open for sceptics to criticise the grounding and quality of OLM, already met with scepticism (Debattista, 2018).

Quality *per se* is a fluid concept, and the diverse views on quality within an online setting makes it even more difficult to define (Tanweer & Quadri, 2016; Baldwin & Ching, 2019). Countless global efforts to establish and promote quality in OL have been undertaken by stakeholders such as quality assurance agencies, organisations, companies and scholars

(Sharif & Gisbert, 2015). These efforts manifest as standards, frameworks, guidelines and rubrics (Masoumi & Lindström, 2011; Ossiannilsson et al., 2015; Seel et al., 2017) (collectively referred to in my study as *quality guiding documents* [QGDs]). Examples of QGDs include the Quality Matters Rubric™ (Quality Matters, 2016), Blackboard Rubric™ (Blackboard, 2017), The Online Course Design Checklist (Baldwin & Ching, 2019) and Course Quality Checklist (Kathuria & Becker, 2021). These QGDs typically include basic criteria to which an OL programme should adhere (Debattista, 2018), such as technology infrastructure, student support, financial health, legal and regulatory requirements and programme delivery. However, it often neglects or lacks comprehensive quality standards for the instructional design of OLM (Avota, 2018; Margaryan, Bianoc & Littlejohn, 2015; Debattista, 2018). This is worrisome, since "instructional design is a key component of the overall quality and pedagogical effectiveness of a learning experience" (Margaryan et al., 2015:78) and a lack thereof might jeopardise the whole programme's quality.

Also, most QGDs emanate from the Global North and as such the applicability thereof in other geo-political contexts is questionable (Bari & Djouab, 2014; Masoumi & Lindström, 2011). At the HE institution I am working at as an ID, two QGDs, namely the Quality Matters Rubric™ and Blackboard Rubric™ are used to guide IDs, like myself, in our design and development practices. Although these are internationally acclaimed QGDs, they might not be suitable for a South African context, given our socio-economic situation, geographics and demographics, language and culture, history, and so forth (Jacobs & Wolhuter, 2021; Steyn, 2021). Literature supports the notion that there is no specific QGD containing the 'one-size-fits-all' factors, encouraging HEIs to adapt existing QGDs to suit their individual profiles (Martin et al., 2017; Vlachopoulos, 2016). It thus calls for a context-specific design that also takes cognisance of the need to decolonise online curricula, inasmuch as it needs to take place for face-to-face curricula.

Decolonisation was born out of the need to decentre Western dominating epistemologies to include more inclusive approaches in the ways we do things and obtain knowledge (Mignolo, 2002; Le Grange, 2016). From an instructional design point of view, I align my view with that of Smith (2021) when she explains that deconstructing and reconstructing are elements of decolonisation. As a South African HE ID I seek to deconstruct current, Western-dominated standards, by considering the views of IDs who daily have to consider the profile and

challenges faced by South African students and design OLM appropriately, towards reconstructing appropriate standards in this study.

Adding to the problem, in South Africa and other countries, including the United Kingdom, a single set of quality standards is used for designing both face-to-face and OL programmes at HEIs (Ossiannilsson et al., 2015). For instance, the accreditation body of qualifications in South Africa, SAQA, has not provided quality standards to design and develop OLM specifically for OL programmes. Some organisations such as the National Association of Distance Education and Open Learning in South Africa[1] (NADEOSA) has taken the lead towards such standards, but at the onset of my study, this has not been adopted by either the state or my institution.

Such a lack of differentiation is problematic, since online and face-to-face programme delivery do not converge (Welch & Reed, 2005). As a result, the quality of these two modes cannot be measured with the same gauge (Tanweer & Quadri, 2016). This then poses challenges to South African HE IDs, since the design and development of learning material for online programmes offered asynchronously differ tremendously from those of face-to-face programmes, even with boundaries blurring. This puts them in a position where the quality of their work might be questioned. In South Africa, no research has been done either to establish *what* HE IDs regard as quality standards, or *how* they translate such standards into their daily design and development of OLM. To add, when the global pandemic forced education institutions to move most of their teaching and learning online, the need for such guidelines was exacerbated.

In view of the global move towards OL and the quest to upgrade and ensure the quality thereof, in this study I thus aim to develop a set of standards, relevant to the South African context, that can inform the design and development of quality OLM.

1.2 Statement of the problem and research question

In view of a lack of published quality standards from the qualification authorities in South Africa on the design and development of OLM, and the need to inform the work that the IDs in my unit and similar units do, I thus posed the following overarching question for this study:

[1] https://www.nadeosa.org.za/

What standards, relevant to the South African context, can be used to design and develop quality online learning material?

I responded to the main research question based on two stand-alone, but interrelated publishable manuscripts, followed by the sensemaking of insight gained in a final chapter.

The following sub-questions scaffolds the main research question:

1. What key pedagogical and visual presentation principles for online learning material design and development can be derived from local and global quality guiding documents? (This question is answered in the first manuscript – Chapter 2 – where I explored, interpreted, and identified standards and approaches to the design and development of OLM from different parts of the world, including from South Africa).
2. How do South African instructional designers' approach and translate the design and development of quality online learning material? (This question is answered in the second manuscript – Chapter 3 – based on interviews conducted with South African HE IDs to understand what they regard as quality and how they translate it into their daily OLM design and development practices).
3. What standards can be derived from the above principles and practices to guide instructional designers to design and develop quality online learning material? (This sensemaking follows from the two manuscripts as an overall conclusion to my study – Chapter 4).

Exploring global and local QGDs in the first manuscript gave me the opportunity to analyse, identify and distil the key pedagogical and visual presentation principles that establish and promote quality in the design and development of OLM. This, together with an investigation of how SA IDs approach and translate quality in their daily design and development practices to produce OLM (in the second manuscript), enabled me to compile a set of standards that can assist South African IDs in their quest to design and develop quality OLM that I present as a final chapter.

Figure 1-3 below gives an overview of how the two manuscripts feed into what I put as a final chapter to this study.

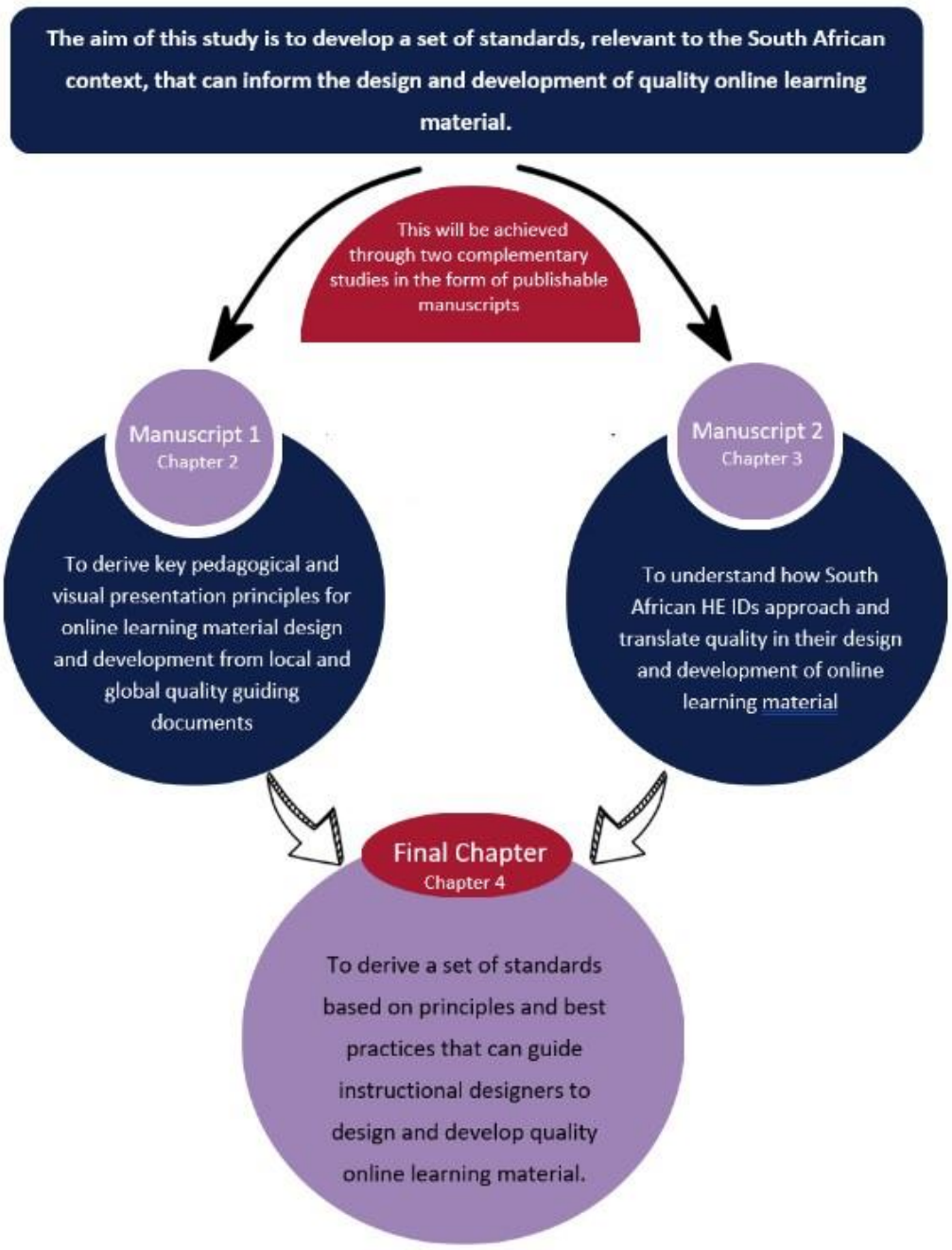

Figure 1-3: Illustration of study layout

1.3 FRAMEWORK FOR ANALYSIS

To craft successful OLM, IDs are expected to incorporate components from both pedagogy and visual presentation while leveraging it with technology (Kilgore & Weaver, 2020); hence I derived my conceptual framework from two specific theories:

- David Merrill's First Principles of Instruction (2002); augmented by Margaryan et al.'s (2015) with an additional five pedagogical principles (which link with pedagogy)
- Mayer's Multimedia Principles (2001) (which link with visual presentation principles)

I used these theories to derive a framework for analysis (cf. 2.2.3) that could speak to both manuscripts, since they are interrelated. A detailed discussion of this framework is included in Chapter 2 (cf. 2.2).

1.4 OVERVIEW OF RESEARCH DESIGN

Although each manuscript has its own methodology section, I provide an overview of the research design for the study.

1.4.1 RESEARCH PARADIGM

The final aim of this study was to establish a set of standards to guide HE IDs in South Africa to design and develop quality OLM. To do this, I first needed to explore what the local and global HE instructional design arena view as pedagogical and visual presentation principles; whereafter I had to increase my understanding about what South African HE IDs perceive as quality and how they translate quality into their daily OLM design and development practices.

Because this study sought to *understand*, the ontological underpinning falls within interpretivism (Merriam & Tisdell, 2016). As an interpretive researcher I sought to investigate how participants perceive and make sense of their daily practices of designing and developing OLM (Elbardan & Kholeif, 2017). Being true to interpretivism, I knew from the onset that there is no single, observable reality (Merriam & Tisdell, 2016). Rather, there are multiple realities or interpretations (participants' views) of a single event (the product they create). As an ID myself, I became part of the research as a "meaning-maker interacting with other meaning-makers" (Phothongsunan, 2010:1) to construct meanings collaboratively on what constitutes quality in OLM (Merriam & Tisdell, 2016).

1.4.2 RESEARCH METHODS

In interpretivism, qualitative methodology is often employed when "not much is known about the issue under study" (Elbardan & Kholeif, 2017:118) with the aim to interpret meanings (Phothongsunan, 2010) in order to gain a deeper understanding of the topic (Elbardan & Kholeif, 2017). As previously explained (cf. 1.1), there was a scarcity of empirical studies on

standards of OLM and on qualitative research of what South Africa HE IDs perceive as quality as well as how they approach and translate it into their design and development practices.

Qualitative design is more sensitive to context and flexible to embracing emerging new themes (Elbardan & Kholeif, 2017), which was the case for this study.

I thus followed a sequential multi-method qualitative research strategy (Saunders, Lewis & Thornhill, 2019) in which I performed literature reviews for both manuscripts. This is followed with a document analysis (Manuscript 1) and the analysis of semi-structured interviews (Manuscript 2).

1.4.2.1 LITERATURE REVIEW

I performed literature reviews for each of the manuscripts by interrogating and interpreting indexed and peer-reviewed publications, government reports, and books. The focus of the literature review for Manuscript 1 was to collect and review information on all local and international QGDs for the design and development of OLM. This allowed me to establish a framework for analysis (cf. 1.3; 2.2.3) or according to Merriam and Tisdell (2016:91), a "foundation" from where I could "set the stage" for my study. For Manuscript 2, the aim of the literature review was to consider what is already known in the field (Merriam & Tisdell, 2016); thus focussing on how IDs typically approach and translate quality into their daily practices of designing and developing OLM. Document analysis

According to Bowen (2009), document analysis is a technique used by researchers to examine and interpret printed or electronic documents, such as texts and images in order to extract meaning, gain understanding and develop knowledge. In Manuscript 1 I used a document analysis to review relevant, reliable and authentic international and local QGDs with regard to the design and development of OLM. From those, I distilled critical and common quality principles which relate to the pedagogical and visual presentation of OLM. I analysed relevant QGDs available through documents, websites and research publications by means of desk-top research and organised information according to the framework for analysis (cf. 1.3; 2.2.).

1.4.2.2 INTERVIEWS

I employed semi-structured interviews in which questions (see Appendix E) were derived from my framework for analysis (cf. 1.3; 2.2.3) and from the literature review. I set up mainly open-ended questions to generate rich data (Elbardan & Kholeif, 2017). I primarily made use of

purposive participant selection (Mertens, 2014), when I selected participants which I knew and based on their experience as IDs at HEIs and in some cases also used snowball sampling (cf. 3.2). Since no formal qualification for IDs exists, participants with more than three years' experience in the design of OLM at HEIs were targeted and selected. Only participants who indicated interest were formally invited via e-mail.

Fifteen IDs of four different HEIs were initially invited to participate in this study. The final number of ID participants was not predetermined. Only nine IDs were willing and available to participate in this study. During the first semester of 2022, I conducted the nine interviews via MS Teams and recorded them with the built-in recording mechanism, with the participants' permission. Data saturation was reached after the ninth interview, since no new concepts or themes emerged (Mertens, 2014). If at this point, I would have found the data to not be saturated, the plan was to contact some of those who were initially not available and negotiate a better time with them.

1.5 INTEGRITY OF THE STUDY

1.5.1 TRUSTWORTHINESS

In both manuscripts I engaged thoroughly with data, allowing themes to crystallise and also provided direct quotes from the interviews to substantiate claims (Merriam & Tisdell, 2016). To ensure trustworthiness of my empirical study, I employed credibility, consistency and representativity (cf. 2.3.2) as well as member checking and audit trail (cf. 3.2) as recommended by Merriam and Tisdell (2016). Further detail is discussed in the two manuscripts.

1.5.2 ETHICAL CONSIDERATIONS

I focused on various ethical considerations during the initial planning of the research (Merriam & Tisdell, 2016). First, I applied and obtained ethical approval from the General Human Research Ethics Committee (UFS-HSD2021/1617/21; see Appendix A) at the UFS before I commenced with this study. Secondly, I contacted and obtained gatekeeper permission from the appropriate ethics committees where the willing participants were employed before any data collection was done (Appendix B). Thirdly, I obtained informed consent from willing participants by sending out an inform consent document (Appendix C &

D) via e-mail. In this document I stipulated the purpose of the study while providing a short, but clear explanation of what was expected of the participants. They were informed that there was no financial reward nor cost involved, that participation was voluntary, and that they were free to withdraw at any stage. All participants were required to provide written consent before I scheduled an interview with them (Arifin, 2018). Identity protection and confidentiality of participants were preserved through all stages of this study. To mitigate issues of recognisability, the participants' names were replaced with a pseudonym and the names of the institutions were never revealed (Merriam & Tisdell, 2016) (cf. 3.2).

1.6 SCIENTIFIC DEMARCATION OF THE STUDY

In the broader context of research in HE, this study falls within two of the eight areas of Higher Education Studies identified by Tight (2012), namely *Quality* and *Course Design*. Tight explains that research about course design typically transmits to how we plan and deliver learning programmes. He furthermore names "technologies for learning" as a subdivision of Course Design (Tight, 2012:7), directly related to the use of technology to design OLM. Secondly, this study falls within *System Standards*, the fourth category of research into quality (Tight, 2012:114), since it sought to understand "what quality means" (p. 114) in the design and development of OLM (cf. 2.1; 3.1) as well as "how it might be applied": how IDs approach and translate quality into the design and development of OLM.

To demarcate this study even further in terms of quality in HE OL, I align it with one of nine quality domain areas of OL, identified by Frydenberg (2002), namely *Instructional Design and Course Development*. She adopted this domain from *The Emerging Set of Guidelines for the Design and Development of Distance Education*, initiated by Innovations in Distance Education (1998). This domain specifically includes five aspects of instructional design and course development which influences quality: learning goals and, content presentation, interactions, assessment and measurement, instructional media and tools, and learner services and support. The concepts studied in this study relate to four of these aspects:

- *learning goals and content presentation*. For any learning experience to be effective, it is crucial to clearly identify, articulate and communicate learning outcomes to students. Although the planned learning outcomes need not be altered for delivery via distance education, new instructional design strategies may need to be considered to support the

intended outcomes. OLM should be sequenced and structured in such a way that students are enabled to achieve the learning outcomes.

- *interactions* form the foundation of a community of students. Whether students interact with one another, with their facilitator, and/or with content, new information is acquired, interpreted, and made meaningful.
- *instructional media and tools* relate to the selection and use of appropriate technology and software to support students in reaching their learning outcomes. IDs should include wide range of technologies that is widely accessible to a diverse student population.

1.7 Significance of the study

In my study I addressed the need pointed out by authors such as Bari and Djouab (2014) to adapt existing QGDs to suit the South African context, recognising amongst others, the need to provide quality glocalised OL opportunities. Thus, my study is advancing the field of HE studies by focusing specifically on what Tight (2012) classifies as quality and course design, and what Frydenberg (2002) describes as *Instructional Design and Course Development*. It is my hope that my study will both improve and ensure quality in the design and development of OLM.

1.8 The way forward

What follows are two interrelated manuscripts, to be evaluated as publishable manuscripts, prepared for publications for submission to specific SCOPUS-listed journals, both published open accesses, if accepted for publication. Manuscript one with title, *Key pedagogical and visual presentation principles for online learning material design and development* will be submitted to the *Turkish Online Journal of Distance Education,*[2] while the second manuscript, with title *Translating Quality into Practice: Insights from South African Instructional Designers,*[3] will be shortened and submitted to *Perspectives in Education*. I will then provide a concluding chapter with a set of standards based on recognized principles and best practices that can guide instructional designers to design and develop quality OLM.

[2] https://dergipark.org.tr/en/pub/tojde
[3] https://journals.ufs.ac.za/index.php/pie/

Because this dissertation is in an article format, each chapter/manuscript will have its own reference list (following the style of multi-authored edited books). As could have been anticipated, there are some overlaps between what is in Chapter 1 and parts of what is in each manuscript. This is to ensure that each of the manuscripts is stand-alone, and sufficiently contextualized, even if presented here as a collection.

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CHAPTER 2: MANUSCRIPT 1 KEY PEDAGOGICAL AND VISUAL PRESENTATION PRINCIPLES FOR ONLINE LEARNING MATERIAL DESIGN AND DEVELOPMENT

ABSTRACT

The growing shift towards online learning has brought about a renewed focus on the quality thereof. Online learning programmes are often judged in terms of their learning material and as a result, countless efforts have been made to promote quality in the design and development of online learning material. These quality initiatives emanated mostly from the Global North, with little or no consideration for the challenges instructional designers face in the Global South. In this study, I analysed 12 global and local quality guiding documents to distil key pedagogical and visual presentation principles for the design and development of online learning material. This study revealed that the most-emphasised pedagogical principles were collaboration and student autonomy, while prominent visual presentation principles encompass multi-modality and personalisation. I conclude by proposing key pedagogical and visual presentation principles for instructional designers to use when designing and developing online learning material.

Key words: Instructional design; learning activities; online learning material; online pedagogy;

2.1 INTRODUCTION

The prominence of online learning (OL) in 21st-century higher education (HE) is irrefutable, particularly for the students of today as digital natives (Mpungose, 2020). With the COVID-19 pandemic, we saw how South African (SA) Higher Education Institutions (HEIs), like the rest of the world, rapidly moved teaching and learning online to enable flexibility and attain academic sustainability in the midst of this worldwide crisis. These hurried moves caused a renewed focus on the quality of OL (Krull & De Klerk, 2021), already often, in the HEI context, held to be of a lower quality than face-to-face offerings (Hodges et al., 2020).

Hodges et al. (2020:3) argue that "online learning can take on any number of meanings depending on the argument someone wants to advance". Indeed, a single definition of OL cannot be found, as groups of researchers and practitioners each define it based on perceptions within their own context (Al-Hosni, 2016). Still, I do not intend to get involved in the debate around this terminology, but rather to sketch a point of departure for this study. To do so, I provide a swift overview of OL as it is considered currently.

Traditionally, OL was regarded as the use of an electronic device such as a computer, smartphone and such, to deliver part, or all of the learning programme's content via the Internet (Bari & Djouab, 2014). At present, this definition is extended far beyond this basic conception, since offering flexibility to the student became a prominent driving force in a worldwide endeavour to widen access to HE (Ossiannilsson et al., 2015; Özgür & Koçak, 2016). This resulted in OL diversifying through mainly three implementation modes, namely time, location, and pace, ultimately to outline OL as it is presently offered (Morrison & Anglin, 2012).

A distinction is made between *on campus* and *near campus* OL. *On campus,* OL happens when students typically attend classes on campus but are required to participate in real-time online activities such as discussion forums on the institution's learning management system (LMS). *Near campus* students would attend class either on campus or at an off-campus centre for instance using a communication tool such as Zoom or MS Teams, also participating in real-time. Where students cannot attend class on campus and are separated from the lecturer in both time and location, we employ *far-distance* OL where they could still be required to participate in real-time activities. In all the above modes, students are expected to be on the "same page at the same time" (Finol, 2020); thus synchronous learning takes place in these situations. These types of OL are frequently referred to as hybrid programmes (Allen & Seaman, 2015) and are often employed by dual-mode HEIs in various degrees (Broadbent, 2017).

Far-distance OL can, however, also be asynchronous by nature when distance students are expected to complete the programme in their own time and at their own pace in a "flexitime" approach (Al-Hosni, 2016:40). In South Africa, this links with what the *South African Department of Higher Education and Training* (DHET) describes as "fully online" (DHET, 2014:8, 9).

Möller (2020) explains the various dynamics of OL when he, for instance, refers to *blended online learning* as a blend of face-to-face learning, with a varying degree of digital support. In Figure 1 (yellow part added by me), he summarises the current South African "OL situation": a continuum where on the one extreme one has *pure* face-to-face teaching with no digital support, and on the other extreme a 100% OL with no face-to-face contact (Möller, 2020). OL can thus be viewed as an agglomeration of the various implementation modes and the degrees thereof (Broadbent, 2017). For the purposes of this study, my definition of OL resonates in the top left quadrant of Figure 1, namely OL catering for a *far distance* audience in a mainly asynchronous mode (with possible sporadic components of synchronous learning). In this mode, 100% of the learning material are delivered *fully online* using web-based technology via a learning management system.

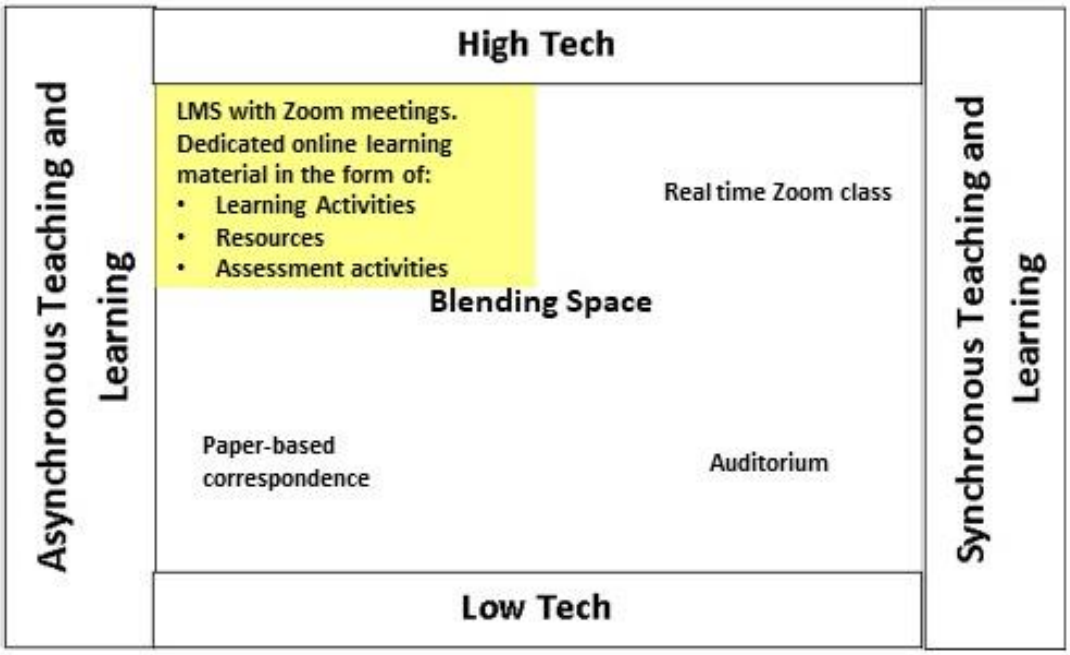

Figure 2-1: Adaption of Möller's 2020 explanation of online learning as blended approach

In the absence of a lecturer, online learning material (OLM) carries a huge responsibility in that it must help the student to reconstruct all the interactions that would typically take place in a face-to-face classroom: student-instructor, student-content and student-student interactions (Morrison & Anglin, 2012). Fully online learning programmes thus call for well-designed, effective and engaging OLM (Avota, 2018; Morrison & Anglin, 2012; Merrill, 2002).

OLM could be broken down into two main entities (Hosie, Schibeci & Backhaus, 2005):

- Learning activities (LAs) correlate strongly with the actions required by the student and are premised on the shift from a lecturer-centred approach to "carefully designed learner experiences with robust interactions between learner and content, learner and student and learner and facilitator" (Moller & Huett, 2012:3). Already in 1983, Adler and Isaacs (1984:50) remarked that "all genuine learning is active, not passive. It is a process of discovery in which the student is the main agent, not the teacher". Active learning, 40 years later, still includes students taking a central role in their learning (Hung, 2015), and as Nagel and Kotze (2010:218) found, "[w]hen students engage in online activities and take responsibility for the quality of interaction, they can have a superior learning experience". IDs usually employ their institution's Learning Management System (LMS) and additional software to create online LAs such as interactive videos, answering of Google Docs, drag-and-drop activities, or the completion of an Articulate Storyline™ activity.
- Resources refer to how the content and information are presented to the students (Hosie, et al., 2005) and include text on screen, PDF readings, infographics, video and PowerPoint presentations.

The process in which OLM are designed and developed with the help of digital technologies are termed instructional design (Pinto & Leite, 2020) and the professionals who are tasked with this are called instructional designers (IDs) (Khalil & Elkhider, 2016; Seel et al., 2017; Sharif & Gisbert, 2015). Proper instructional design takes time, effort and skill (Morrison & Anglin, 2012) and calls for a comprehensive understanding of educational technology, online pedagogy and visual presentation principles to craft high-quality OLM (Kilgore & Weaver, 2020). My study focuses on the latter two components: pedagogy and visual presentation principles, since these components fall within the sphere of control of the ID.

Pedagogy links strongly with LAs (Hosie, et al., 2005; Merrill, 2002) when IDs employ specific online pedagogical principles in the LAs they design and create to elicit student performance (Hung, 2015; Kilgore & Weaver, 2020; Al-Hosni, 2016). A myriad of pedagogical principles for OL exist, with the main ones being student-oriented, centred on constructivist theories, adult learning theories and cognitive theories (Al-Hosni, 2016; Archambault, Leary & Rice, 2022). It is, however, David Merrill's First Principles of Instruction (FPI), which is regarded by scholars as a solid pedagogical framework for designing and developing LAs to facilitate active learning and engagement, which enhance the learning experience (Badali et al., 2018; Margaryan,

Bianco & Littlejohn, 2015; Moallem & Cai, 2021) and hence form part of the framework for analysis for this study (cf. 2.2.3).

In addition to pedagogy, visual presentation is another important element to consider when IDs design and develop OLM (Mayer, 2001). The visual presentation of OLM influences students' cognitive processing (Rosar & Weidlich, 2022) in that the pictorial arrangement of elements presented to students affects their ability to discriminate and organize them for cognitive processing (Guilford, 1975). Thus, how information is communicated to learners influences the learning process significantly (Ramlatchan, 2019). The visual presentation of OLM is imperative in the creation of OLM, since it allows for the creation of unique, personal and memorable content, contributing to creative and positive learning experiences (Manovich, 2017). Sharma and Alam (2022:7) even found that visual presentation significantly influences students' emotional responses to OLM and advocates "designers to concentrate on the aesthetical appeal" of OL. Ghai (2022:10905) urgently appeals for "educational institutions and faculty to address the instructional role of visual information", while Glore and David (2012:388) call for visual presentation principles to "be considered" in the design processes. This, however, is not the case, as Bader and Lowenthal (2018:1) report: "minimal effort is dedicated to the look and feel of online courses". The same seems to ring true for the inclusion of pedagogical principles as echoed in Serdyukov's (2012:62) statement that "online pedagogy is lagging behind".

Countless global standards, frameworks, guidelines and rubrics (collectively referred to as quality guiding instruments) exist to guide IDs in their quest for quality during the design and development of OLM (Masoumi & Lindström, 2012; Ossiannilsson et al., 2015; Seel et al., 2017; Sharif & Gisbert, 2015). These quality guiding documents (QGDs) typically cover basic criteria to which an OL programme should adhere (Debattista, 2018). This could include technology, infrastructure, student support, financial health, legal and regulatory requirements, and programme delivery (Masoumi & Lindström, 2012; Ossiannilsson et al., 2015; Seel et al., 2017). Yet mostly they do not account for key principles such as pedagogy (Margaryan et al., 2015) and as a result, programmes might lack this important element of quality (Mahdavinasab, Sadipour & Moradi, 2019). Also, these QGDs mostly emanated from the Global North. Accordingly, the applicability of such instruments in other cultural contexts is questionable (Bari & Djouab, 2014; Masoumi & Lindström, 2012) and should be adopted to suit a specific context (Martin et al., 2017). In South Africa, The Council on Higher Education

(CHE) does not have any mandatory quality criteria pertaining to pedagogical approaches and/or visual presentation principles to create OLM. It is uncertain which quality criteria (if any) SA HEI IDs employ to design and develop OLM.

From the above, it can thus be derived that IDs must have adequate knowledge of both pedagogy and visual presentation principles to design and develop effective and engaging OLM. In the Global South, and specifically in South Africa, the instructional design profession is still in its infancy (Pallitt et al., 2018). Barlow-Zambodla, Carr and Pedersen (2017) even report instructional design and the creation of OLM as the most urgently needed skills in African universities. Indeed, in South Africa, instructional design has recently been declared a scarce skill (Department of Home Affairs, 2022). Most IDs have to rely on short courses, workshops, mentorship and learning through experience, as few opportunities exist for professional training and education in the field of ID (Pallitt et al., 2018). This leaves the door open for sceptics to criticise the grounding and quality of OLM (Debattista, 2018).

The aim of this paper was to contribute to academic discourse on, as well as the practice of instructional design through a thematic document analysis of existing global and local QGDs to derive key pedagogical and visual presentation principles for the design and development of OLM. Findings from this study can inform novice IDs, faculty, and policy makers on what the key pedagogical and visual presentation principles for effective and engaging OLM are. The study specifically addressed the following research sub-questions:

1. Which leading global and local quality guiding documents are available to ensure quality in the design and development of OLM?
2. Which key pedagogical and visual presentation principles for online learning material design and development can be derived from such local and global quality guiding documents?

2.2 Frameworks for the analysis of quality of OLM

This paper explored instructional design quality in terms of pedagogical and visual presentation principles of OLM. As a point of departure, Merrill's (2002) First Principle of Instruction (FPI), augmented by an additional five principles by Margaryan et al. (2015), are used as the *pedagogical* lens, whilst Mayer's Multimedia Principles (Mayer, 2001) are the lens through which *visual presentation* is viewed. These three theories will now be discussed,

whereafter other QGDs are considered, and principles added towards achieving the aim of this study.

2.2.1 Merrill and Margaryan's 10-principle FPI framework

FPI is the result of David Merrill's lifetime synthesis of contemporary instructional design models, theories, and methods in the search for universal pedagogical principles (Truong, Elen & Clarebout, 2019), applicable to all teaching and learning environments, audiences, and across all subject-matter domains (Snyder, 2011). Since the inception of FPI, research has shown that face-to-face learning programmes, which combine these principles, are more efficient, effective and engaging than learning programmes that fail to do so (Truong et al., 2019). The same applies for FPI in the design and evaluation of OL at HEIs (Margaryan et al., 2015; Snyder, 2011; Truong et al., 2019).

FPI comprises five principles: problem-centeredness, activation, demonstration, application, and integration. These principles postulate that learning is promoted when:

- students are engaged in solving real-world problems;
- prior knowledge is activated;
- new knowledge is demonstrated to the student;
- new knowledge is applied by the student; and
- new knowledge is integrated into the student's perceptions and experiences (Merrill, 2002).

Margaryan et al. (2015) have recently added an additional five principles that focus on learning resources and learning support to Merrill's first five, to form a 10-principle FPI framework. This framework is used to evaluate the instructional design quality of online programmes and include:

- collective knowledge,
- collaboration,
- differentiation,
- authentic resources, and
- feedback.

These principles indicate that learning is promoted when: learners contribute to the collective knowledge; learners collaborate with others; different learners are provided with different avenues of learning according to their need; learning resources are drawn from real-world settings; and learners are given expert feedback on their performance (Margaryan et al., 2015).

This 10-principle FPI framework was applied and tested to evaluate the quality of instructional design of over 100 online programmes within a university setting (Margaryan et al., 2015) and were thus used as point of departure for this study.

2.2.2 MAYER'S MULTIMEDIA PRINCIPLES

In addition to pedagogical principles, quality of OLM is also viewed in terms of how information is communicated and visually presented to students (Ramlatchan, 2019). Such information should be carefully structured in a manner to make it comprehensible and engaging for the student (Piña, 2017). Information contained in OLM mainly consists of individual or combined instances of text, audio, still images, and or video/motion images (Piña, 2017), i.e. multimedia instruction. Multimedia instruction refers to the presentation of OLM using both words and pictures, with the intention of promoting learning (Mayer, 2001).

Richard Mayer is seen as the father of multimedia learning, or in the term used in this study, OLM, since his research is based on how best to structure words and pictures to maximize learner comprehension (Piña, 2017). However, simply adding words to pictures is not an effective way to achieve learning via multimedia. The goal is to design multimedia in the light of how the human mind works. In his book, *Multimedia Learning* (Mayer, 2001), he includes 10 principles of multimedia learning:

1. ***Signalling Principle*** (learning happens better when essential material is highlighted).
2. ***Redundancy Principle*** (learning happens better when a combination of graphics and narration are used than when graphics, narration, and onscreen text are employed).
3. ***Spatial Contiguity Principle*** (learning happens best when corresponding words and pictures are presented near, rather than far from each other on the page or screen).
4. ***Temporal Contiguity Principle*** (learning is promoted when corresponding words and graphics are presented together, instead of in consecutive order).

5. ***Segmenting Principle*** (learning happens better when information is presented in segments rather than one long continuous stream).
6. ***Pre-training Principle*** (learning is more efficiently if students already know some of the basics, i.e. terms, definitions, concepts).
7. ***Modality Principle*** (learning happens better when a combination of graphics with spoken words are used instead of graphics with printed text).
8. ***Multimedia Principle*** (learning happens best when words and pictures are used rather than words alone. This principle is the core the foundation of all Mayer's principles, namely that images and words are more effective than words only.
9. ***Personalisation Principle*** (learning happens better when a more informal, conversational voice rather than an overly formal voice is used).

2.2.3 *Framework for analysis within the steps of instructional design*

Since no framework currently exists to include both pedagogical and visual presentation principles, I combined Merrill's and Margaryan's 10-principle FPI framework with Mayer's Multimedia Principles to come up with a unique framework for this study. I furthermore position this framework within the widely used instructional design model that describes the process for the design of OLM, namely ADDIE, a five-step acronym for analyse, design, develop, implement and evaluate (Dick & Carey, 1996). This study only focuses on the second and third steps of ADDIE, namely design and development. Figure 2-2 illustrates how the 10-principle FPI framework, Mayer's Multimedia Principles, and ADDIE are employed as framework for analysis for this study.

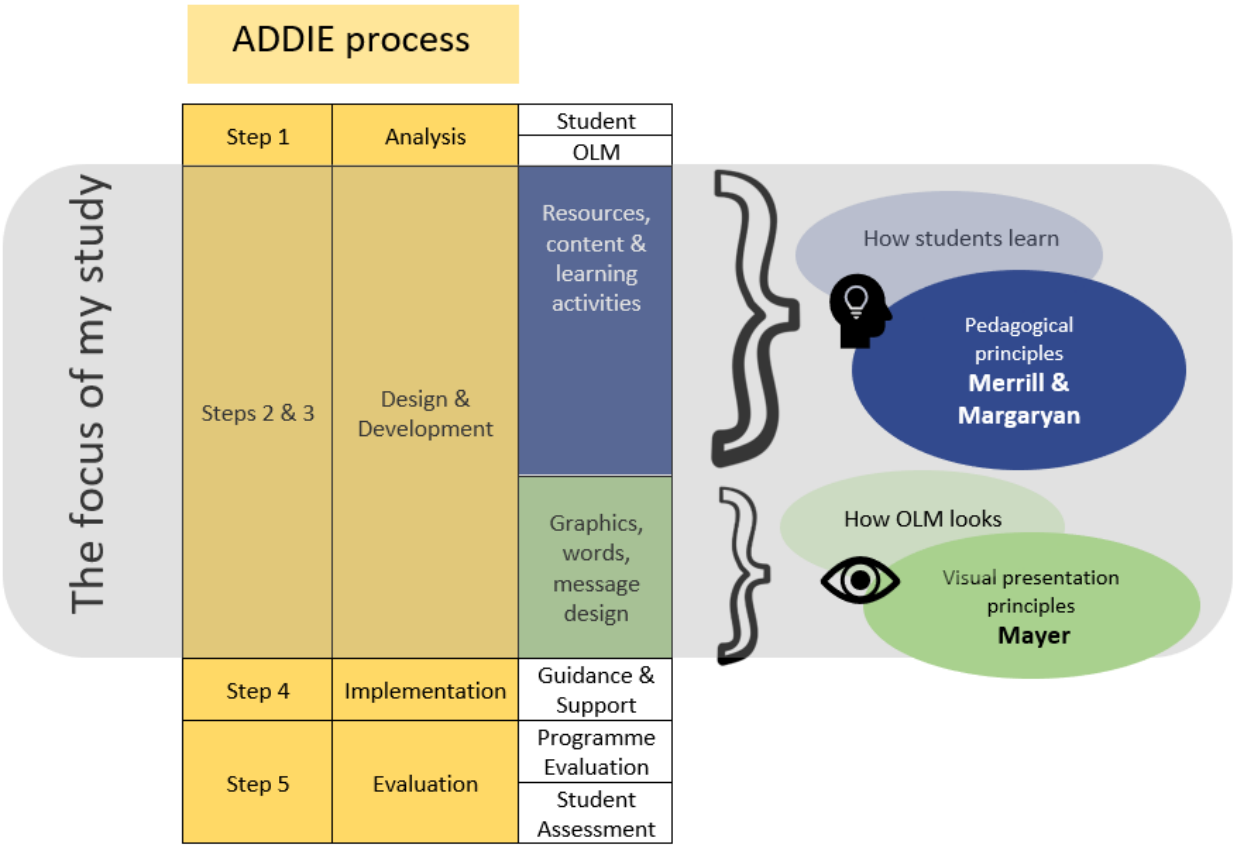

Figure 2-2: Framework for analysis based on a combination of the 10-principle framework by Merrill (2002) and Margaryan's (2015) with Mayer's Multimedia Principles (2001) and ADDIE (1996).

2.3 Methodology

2.3.1 Approach

In this section I provide an audit trail to enhance trustworthiness of the study. I followed a qualitative document analysis approach to address the aim of this study, which was to analyse local and global QGDs to derive key pedagogical and visual presentation principles for OLM. Bowen's (2009) document analysis involves three broad steps, namely skimming, reading and interpretation. Another approach to document analysis could be seen in Krippendorff's (2018) five steps, including access documents, assessing the validity of documents, comprehending documents, analysing the data and applying the information. I adopted both models for this study to derive a more comprehensive model, illustrated in Figure 2-3. Although document analysis models could typically be seen as following a systematic procedure (Bowen, 2009), I

found it to be more iterative, typical of qualitative research, allowing me to go back and forth between the steps and thereby gaining deeper insight and interpretation of the principles listed in the documents (Dalglish, Khalid & McMahon, 2020).

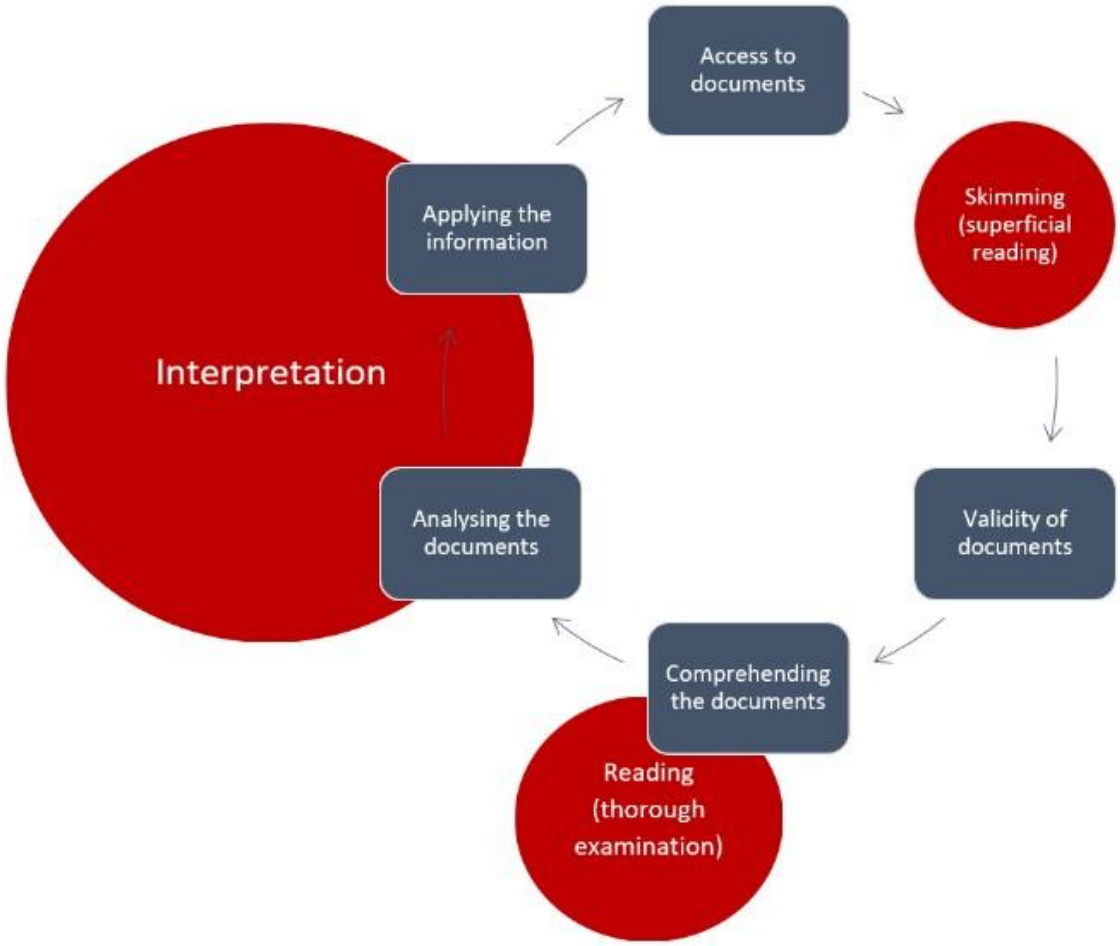

Figure 2-3: Steps took based on an adaption of Krippendorff (2018) and Bowen's (2009) document analysis models.

2.3.2 DOCUMENT SOURCES

Access to documents (cf. Figure 2-3) entailed an extensive online search for QGDs that could possibly answer the research question (Gross, 2018) early in 2021. An expert librarian and I searched the following databases: EbscoHost™, Google Scholar and Sabinet Online™, and the University of the Free State online library catalogue. Additionally, I searched the internet for additional relevant sources on websites. These searches were conducted using deliberate keywords such as *quality in online learning*, *instructional design standards*, *visual design*

principles, *online pedagogy*. Depending on what was found, I considered several websites and sources.

During the *skimming* phase, 35 QGDs relevant to the keywords were screened, selected and stored in an online folder. Merriam (2016) offers various ways to ensure that qualitative research is trustworthy, namely establishing credibility, consistency and representativity, which will now be discussed.

I minimised threats to validity by considering the *credibility* of QGDs as well as being *consistent* in the selection thereof (Cohen, Manion & Morrison, 2011). Towards credibility, I searched (1) websites exclusively for official documents (policies), (2) implementation documents (training guides, checklists, instruments, rubrics), and (3) scholarly work (peer-reviewed publications, master's or doctoral dissertations, and textbooks).

To advance consistency in selecting QGDs, I used the following three eligibility criteria: (1) QGDs that were publicly available; (2) QGDs, including quality criteria that relate distinctly to the visual and pedagogical design components of OLM in a Higher Education environment; and (3) QGDs available after 2005. I started to employ the selection criteria when I studied the QGDs in depth (*comprehension*).

Since lack of representativity is frequently viewed as a concern in document analysis (Dalglish et al., 2020), I intentionally focused my search also to include countries comparable with the South African OL HE context. Qualitative research necessitates that one employs stakeholders that are knowledgeable about the topic (Leendertz, 2013); therefore, my search also includes renowned quality criteria documents.

With regard to the first research question: "Which global and local quality guiding documents are available to ensure quality in the design and development of OLM?", the literature study revealed that 12 of the initial 35 QGDs met the eligibility criteria and I briefly provide some background to each.

2.3.2.1 National Association of Distance Education and Open Learning in South Africa (NADEOSA)

One of the first initiatives to promote quality in the OL and specifically in the fully online sphere in SA HEIs was spearheaded by the *National Association of Distance Education and*

Open Learning in South Africa (NADEOSA) (Welch & Reed, 2005). In 2005 they put forward a framework with 13 criteria/standards and subsequent elements to improve and ensure quality in distance education. The idea was to publish these criteria as a separate policy document for distance education, but until today, it has not been officially promulgated beyond the association, although a revised document was published in 2021 (with case studies still pending). Only two of the thirteen criteria relate specifically to the design of OLM, namely "Course design" and "Materials Development" (NADEOSA, 2021:12-17).

2.3.2.2 Council on Higher Education (CHE)

The Council on Higher Education in South Africa published the *Distance Higher Education programmes in a digital era: Good Practice Guide* (CHE, 2014) in with guidelines, examples and indicators for the development and evaluation of distance education programmes. This guide is intended primarily to assist those involved in programme design (among others, IDs) and review at institutional level as well as CHE programme evaluators involved in the accreditation process of distance education programmes. This guide has been developed through consultation with open and distance learning (ODL) experts, distance education evaluators, CHE accreditation staff, members of NADEOSA, and student representatives (p. viii). Large sections of this guide are dedicated to "Curriculum design and materials development for distance education" (CHE, 2014:17-56).

2.3.2.3 Quality Assurance Toolkit for Distance Higher Education and Programmes

Initially, Sri Lanka, in collaboration with the Commonwealth of Learning (COL), developed *The Quality Assurance Toolkit for Distance Higher Education Institutions and Programmes* to enhance and ensure quality in Open Universities (OUs) and Distance Higher Education in 2006 (COL, Quality Assurance Toolkit for Distance Higher Education Institutions and Programmes, 2009). The toolkit comprises 16 quality criteria which identify the essential elements in offering distance HE programmes, with two criteria relating specifically to the design of OLM, namely "Programme design and development" (pp. 55-62) and "Course design and development" (pp. 63-70). In 2008 the toolkit was revised by a team of Distance Educators and Quality Assurance experts from Canada, Hong Kong, India, Jamaica, Malaysia, Pakistan, Papua New Guinea, South Africa, Sri Lanka, United Kingdom, and UNESCO to make it internationally applicable.

2.3.2.4 E-QUALITY FRAMEWORK

The *E-quality framework* was developed by Masoumi and Lindström (2012:27-41) in Spain through a comprehensive review of practical knowledge, which includes guidelines, benchmarks, and models, as well as through research based on the quality of OL in HE. This framework is influenced by sociocultural thought where students' "social aspects of learning" are taken into consideration, an aspect often ignored by others (Masoumi & Lindström, 2012:28). Seven main factors were identified, with clusters of related quality criteria within each. Two of these criteria relates specifically to the quality of ID of OLM, namely "Instructional Design Factor" and "Pedagogical Factor" (Masoumi & Lindström, 2012:29, 31, 32).

2.3.2.5 AICTE OPEN AND DISTANCE LEARNING EDUCATION GUIDELINES

The *All India Council for Technical Education (AICTE) Open and Distance Learning Education Guidelines* (Distance Education Council of India, 2021) was developed by the Distance Education Council (DEC) of India as a sounding board for Open and Distance Learning Higher Education Institutions (ODLHEI) in their endeavour towards excellence. This guideline comprises five criteria, with all of them ("Learning Material", "Audio-Video Material", "Online Material". Computer-based material" and "Curriculum and Pedagogy" relating specifically to the design and development of OLM.

2.3.2.6 FRAMEWORK FOR E-LEARNING INSTRUCTION DESIGN

An extensive Iranian investigation into effective components to be considered in designing e-learning environments in HE led to the compilation of the *Framework for E-Learning Instruction Design* (Mahdavinasab et al., 2019). These authors conducted a systematic analysis of 33 articles where they concentrated on effective instructional design components of online material. Their framework is designed to be operational and practical in the sense that it could be utilised by IDs in the HE context, and includes the following components: analysis, instructional design and strategies, learning environments design, e-content development, message design, guidance and support and assessment and evaluation (Mahdavinasab et al., 2019:14-16).

2.3.2.7 A FRAMEWORK AND CHECKLIST FOR EVALUATING ONLINE LEARNING IN HIGHER EDUCATION

An Indonesian and Australian collaboration to design a framework in the form of a checklist that provides detailed description of essential quality elements of OLM (Hosie et al., 2005). The checklist elicits three main areas of quality in OLM, namely pedagogies, resources and delivery strategies. The authors promote their tool as a method to indicate "areas of the materials that are pedagogically strong and identify weaknesses that need further attention" (Hosie et al., 2005:546), rather than it be used as a definite evaluation of OLM.

2.3.2.8 THE OPEN SUNY COURSE QUALITY REVIEW RUBRIC™

The *Open SUNY Course Quality Review Rubric* (OSCQR) is a recent outcome of collaboration between The Online Learning Consortium (OLC), a community of HE leaders in United States of America (USA) concerned with quality of digital teaching and learning, and the State University of New York Open (SUNY). OSCQR is employed as a quality rubric for reviewing and improving, specifically, the instructional design component of online programmes in the HE landscape. The OSCQR is informed by 20 years of research on best online practices and grounded in renowned teaching and learning theories. OSCQR has six main categories, with four focusing specifically on ID, namely Design and Layout, Content and Activities, Interaction, and Assessment and Feedback.

2.3.2.9 QUALITY ASSESSMENT FOR E-LEARNING: A BENCHMARKING APPROACH

The European Association of Distance Teaching Universities (EADTU) is Europe's leading association in distance HE. In 2016, they published a third edition of their manual, *Quality Assessment for E-learning: a Benchmarking Approach,* to provide a set of benchmarks, quality criteria and notes for guidance against which OL programmes and their support systems may be judged. Fifty European HEIs participated in the compilation of this manual, which could also be seen as a tool for IDs to design and develop OLM (p. 8). Two of the six criteria, namely Curriculum design and Course design, encompass specific guidelines for the design and development of OLM.

2.3.2.10 THE ESSENTIALS OF INSTRUCTIONAL DESIGN

In their book, *The Essentials of Instructional Design*, Brown and Green (2016) introduces essential elements of instructional design by providing an overview of principles and best practices in instructional design and without placing emphasis on only one model. Chapters

one to three cover the main steps of instructional design, namely learner, task and needs analysis, developing outcomes, organising instruction, developing instructional activities, assessing learner achievement, and evaluating the success of the instructional design.

2.3.2.11 AECT Instructional Design Standards for Distance Learning

The *Instructional Design Standards for Distance Learning* was the first published set of global standards, developed by the Association for Educational Communications and Technology (AECT) in 2018 as a tool to guide IDs before, during and after the design of OLM. AECT is a leading international professional association for the scholarly study and practice of instructional design established in 1923 (Piña, 2017). The recently published standards are based on extensive research literature on instructional design and underwent blind peer reviews by experienced professionals in ID and OL. Ten standards, all directly relating to the design of OLM, were compiled. They are purpose, assumptions, sequence, activities, resources, application of knowledge, assessment, reflection, independent learning, and evaluation.

2.3.2.12 Blackboard Rubric

The *Blackboard Exemplary Course Program Rubric* (Blackboard Rubric™) was specifically designed with IDs in mind as it is based on best practices in the design of high-quality OL programmes when HEIs use Blackboard as LMS. Countless HEIs make use of Blackboard, with numerous SA HEIs, such as UFS, also on the list. It constitutes four core areas with specified standards of which three directly relates to the design of OLM: Course Design, Interaction & Collaboration, Assessment, and Learner Support.

2.3.3 Data analysis

In order to respond to the second question posed in the manuscript, namely "What key pedagogical and visual presentation principles for online learning material design and development can be derived from such local and global quality guiding documents?", I analysed the qualitative data (obtained from the 12 QGDs introduced above) deductively. The analytical framework with its predetermined quality elements formed an initial codebook to apply to all documents (Gross, 2018), which I set up in table form. Each column represented a quality principle (relating to either a pedagogical or visual design principle) and each row, reference to the document in which that principle appears (cf. Tables 2-1 and 2-2). After these principles had been coded and compiled, they were checked by a senior ID to verify that the

codes matched the principles. I then considered how often each of the principles appeared in the ten QGDs as a possible indication of their importance (arguably, not absolute truths).

2.4 FINDINGS

I used my derived framework for analysis (cf. 2.2.3) to analyse the 12 documents. The analysis revealed 19 pedagogical and 13 visual presentation principles that correspond with my analytical framework.

2.4.1 PEDAGOGICAL PRINCIPLES

Table 2-1 displays the specific pedagogical principle with the number of QGDs in which the principle appeared.

Table 2-1: Pedagogical principles for the instructional design of online learning material (n=12)

Pedagogical principle	Number of documents with this principle	Description	Quality Guiding Documents
Collaboration*	10	Learning is promoted when students collaborate with one another	Blackboard, 2017; Mahdavinasab et al., 2019; The open SUNY COTE quality review process and rubric, 2015; Masoumi & Lindström, 2012; CHE, 2014; Welch & Reed, 2005; Hosie et al., 2005; COL, 2009; EADTU, 2016; Brown & Green, 2016.
Independent learning/learner autonomy**	10	Students take individual "ownership" of the learning process and proceed at their own pace and own time to accomplish outcomes	Mahdavinasab et al., 2019; Piña, 2017; AICTE, 2021; Masoumi & Lindström, 2012; CHE, 2014; Welch & Reed, 2005; Hosie et al., 2005; COL, 2009; EADTU, 2016; Brown & Green, 2016.

Pedagogical principle	Number of documents with this principle	Description	Quality Guiding Documents
Higher-order thinking skills**	9	Create opportunities for students to critically reflect, analyse, evaluate and synthesize	Blackboard, 2017; Mahdavinasab et al., 2019; Piña, 2017; AICTE, 2021; The open SUNY COTE quality review process and rubric, 2015; CHE, 2014; Welch & Reed, 2005; COL, 2009; Brown & Green, 2016.
Collective knowledge*	9	Learning is promoted when students contribute to the collective knowledge	Piña, 2017; Mahdavinasab et al., 2019; The open SUNY COTE quality review process and rubric, 2015; CHE, 2014; Welch & Reed, 2005; Hosie et al., 2005; COL, 2009; EADTU, 2016; Brown & Green, 2016.
Constructivism**	9	Students construct knowledge in their own context and in their own way	Piña, 2017; Mahdavinasab et al., 2019; AICTE, 2021; Masoumi & Lindström, 2012; CHE, 2014; Hosie et al., 2005; COL, 2009; EADTU, 2016; Brown & Green, 2016.
Extended learning**	9	Students should be allowed to go beyond the constraints of the formal programme structure to engage in self-directed learning	Piña, 2017; AICTE, 2021; The open SUNY COTE quality review process and rubric, 2015; CHE, 2014; EADTU, 2016; Brown & Green, 2016; Blackboard, 2012; COL, 2009; Mahdavinasab et al., 2019.
Problem-based principle*	8	Learning is promoted when students acquire skill in the context of real-world problems	Mahdavinasab et al., 2019; Piña, 2017; AICTE, 2021; The open SUNY COTE quality review process and rubric, 2015; CHE, 2014; COL, 2009; EADTU, 2016; Brown & Green, 2016.

Pedagogical principle	Number of documents with this principle	Description	Quality Guiding Documents
Differentiation *	8	Learning is promoted when different students are provided with different avenues of learning, according to their need and capacity	Piña, 2017; Blackboard, 2017; Mahdavinasab et al., 2019; AICTE, 2021; CHE, 2014; COL, 2009; EADTU, 2016; Brown & Green, 2016.
Authentic*	7	Learning is promoted when learning resources are drawn from real-world settings	Mahdavinasab, Sadipour & Moradi, 2019; Piña, 2017; The open SUNY COTE quality review process and rubric, 2015; Hosie, Schibeci & Backhaus, 2005; COL, 2009; EADTU, 2016; Brown & Green, 2016.
Activation principle*	7	Learning is promoted when students activate existing knowledge and skill as a foundation for new skill and knowledge	Piña, 2017; Mahdavinasab et al., 2019; AICTE, 2021; CHE, 2014; Welch & Reed, 2005; Hosie, Schibeci & Backhaus, 2005; Brown & Green, 2016.
Active learning**	7	Learning is enhanced when students are cognitively engaged with learning material; these should be specifically designed	Piña, 2017; Mahdavinasab et al., 2019; AICTE, 2021; CHE, 2014; Welch & Reed, 2005; COL, 2009; Brown & Green, 2016.
Application principle*	5	Learning is promoted when students apply their newly acquired skill to solve problems	Piña, 2017; Mahdavinasab et al., 2019; AICTE, 2021; CHE, 2014; Brown & Green, 2016.

Pedagogical principle	Number of documents with this principle	Description	Quality Guiding Documents
Feedback to learner*	5	Learning is promoted when students are given expert feedback on their performance	Piña, 2017; Mahdavinasab et al., 2019; AICTE, 2021; CHE, 2014; Brown & Green, 2016.
Integration principle*	5	Learning is promoted when students reflect on, discuss, and defend their newly acquired skill; new knowledge is integrated into the student's world	Piña, 2017; CHE, 2014; Welch & Reed, 2005; EADTU, 2016; Brown & Green, 2016.
Motivation**	5	Learning should stimulate intrinsic motivation, hope, positive beliefs, self-efficacy of students	Mahdavinasab et al., 2019; Piña, 2017; Lindström & Masoumi, 2012; Hosie, Schibeci & Backhaus, 2005; EADTU, 2016.
Deep learning**	5	Create learning opportunities to allow a deeper level of information processing that leads to long-term retention	Piña, 2017; AICTE, 2021; CHE, 2014; COL, 2009; EADTU, 2016.
Transferrable skills**	4	Create opportunities to foster abilities and competencies which may be used in a variety of and across different areas in life: socially and professionally	Blackboard, 2017; COL, 2009; EADTU, 2016; Brown & Green, 2016.

Pedagogical principle	Number of documents with this principle	Description	Quality Guiding Documents
Learner Reflection**	3	Create opportunities for students to examine their thoughts, experiences and ways of doing	Blackboard, 2017; Piña, 2017; Brown & Green, 2016.
Demonstration Principle*	1	Learning is promoted when new knowledge and/or skill is demonstrated to the student	Piña, 2017.

* According to the 10-principle framework by Merrill and Margaryan (cf. 2.2.1)

** Additionally identified in quality guiding documents

The two most emphasised pedagogical principles in the QGDs were *student collaboration* and *student autonomy,* as these appeared in 10 of the 12 QGDs. Following the latter were fostering *higher order thinking skills*, *building knowledge collectively, constructivism*, and *the creation of extended learning spaces* (evident in nine of the 12 QGDs). The *problem-based principle* and *differentiation* came forth followed, apparent in eight of the 12 QGDs. Surprisingly, demonstrating knowledge was the least-emphasized pedagogical principle, since only one QGD mentions it.

2.4.2 *Visual presentation principles*

Table 2-2 displays the specific visual presentation principle with the number of QGDs in which the principle appeared.

Table 2-2: Visual presentation principles for the instructional design of online learning material (n=12)

Visual Design Principle	Number of documents with this principle	Description	Quality guiding documents
Multimodality##	11	Student learning happens best when words and pictures rather than words alone are used	Piña, 2017; AICTE, 2021; Blackboard, 2017; Mahdavinasab et al., 2019; CHE, 2014; Hosier et al., 2005; COL, 2009; EADTU, 2016; Brown & Green, 2016; The open SUNY COTE quality review process and rubric, 2015; Masoumi & Lindström, 2012.
Personalization Principle##	9	Students learn better from a more informal, conversational voice than from an overly formal voice	Piña, 2017; AICTE, 2021; Masoumi & Lindström, 2012; CHE, 2014; Welch & Reed, 2005; COL, 2009; EADTU, 2016; The open SUNY COTE quality review process and rubric, 2015; Hosie et al., 2005.
Appropriate & efficient sequencing##	8	Appropriate, efficient and variety of sequencing (resources)	AICTE, 2021; Hosie et al., 2005; Masoumi & Lindström, 2012; Mahdavinasab et al., 2019; Welch & Reed, 2005; Piña, 2017; CHE, 2014; Brown & Green, 2016.
Navigation##	8	Easy and intuitive navigation	Blackboard, 2017; Mahdavinasab et al., 2019; AICTE, 2021; The open SUNY COTE quality review process and rubric, 2015; Masoumi & Lindström, 2012; Welch & Reed, 2005; Hosie et al., 2005; EADTU, 2016.
Signalling Principle#	7	Students learn better when essential material is highlighted	Mahdavinasab et al., 2019; Blackboard, 2017; AICTE, 2021; The open SUNY COTE quality review process and rubric, 2015; CHE, 2014; Welch & Reed, 2005; EADTU, 2016.

Visual Design Principle	Number of documents with this principle	Description	Quality guiding documents
Font size & color##	6	Appropriate and consistent use of colour scheme and font; Colour and font reflect universal accessibility considerations	Blackboard, 2017; Mahdavinasab et al., 2019; EADTU, 2016; Welch & Reed, 2005; The open SUNY COTE quality review process and rubric, 2015; Hosie et al., 2005.
Integration##	5	Different elements integrate seamlessly with one another	CHE, 2014; Welch & Reed, 2005; EADTU, 2016; AICTE, 2021; COL, 2009.
Progression##	4	Structure should assist the logical flow and progression of ideas and information	Blackboard, 2017; EADTU, 2016; CHE, 2014; The open SUNY COTE quality review process and rubric, 2015.
Segmenting Principle#	4	Students learn better when information is presented in segments, rather than one long, continuous stream)	Blackboard, 2017; AICTE, 2021; The open SUNY COTE quality review process and rubric, 2015; CHE, 2014.
Temporal Contiguity Principle#	2	Students learn best when corresponding word and graphics are presented together, instead of in consecutive order	Piña, 2017; AICTE, 2021.
Pre-training#	2	Students learn more efficiently if they already know some of the basics e.g. terms, definitions, concepts	Mahdavinasab et al., 2019; AICTE, 2021.

Visual Design Principle	Number of documents with this principle	Description	Quality guiding documents
Redundancy Principle#	1	Students learn better from graphics and narration than from graphics, narration and onscreen text	Piña, 2017.
Spatial Contiguity Principle#	1	Students learn best when corresponding words and pictures are presented near rather than far from one another on screen	Piña, 2017.

Included in Mayer's multimedia principles (cf. 2.2.2)
Additional identified in quality guiding documents

Regarding visual presentation principles, the *multimodality principle* appears in 11 of the 12 QGDs, with the *personalisation principles* manifesting in in nine of the 12 QGDs. These are followed by *appropriate and efficient sequencing* and intuitive *navigation* (evident in eight of the 12 QGDs). *Temporal, pre-training, redundancy* and *spatial contiguity* principles were the least mentioned in the QGDs.

2.5 KEY PEDAGOGICAL AND VISUAL PRESENTATION PRINCIPLES FOR ONLINE LEARNING MATERIAL DESIGN AND DEVELOPMENT

Based on my analysis of the QGDs, I have compiled the key pedagogical and visual presentation (PVP) framework (see Figure 2-4).

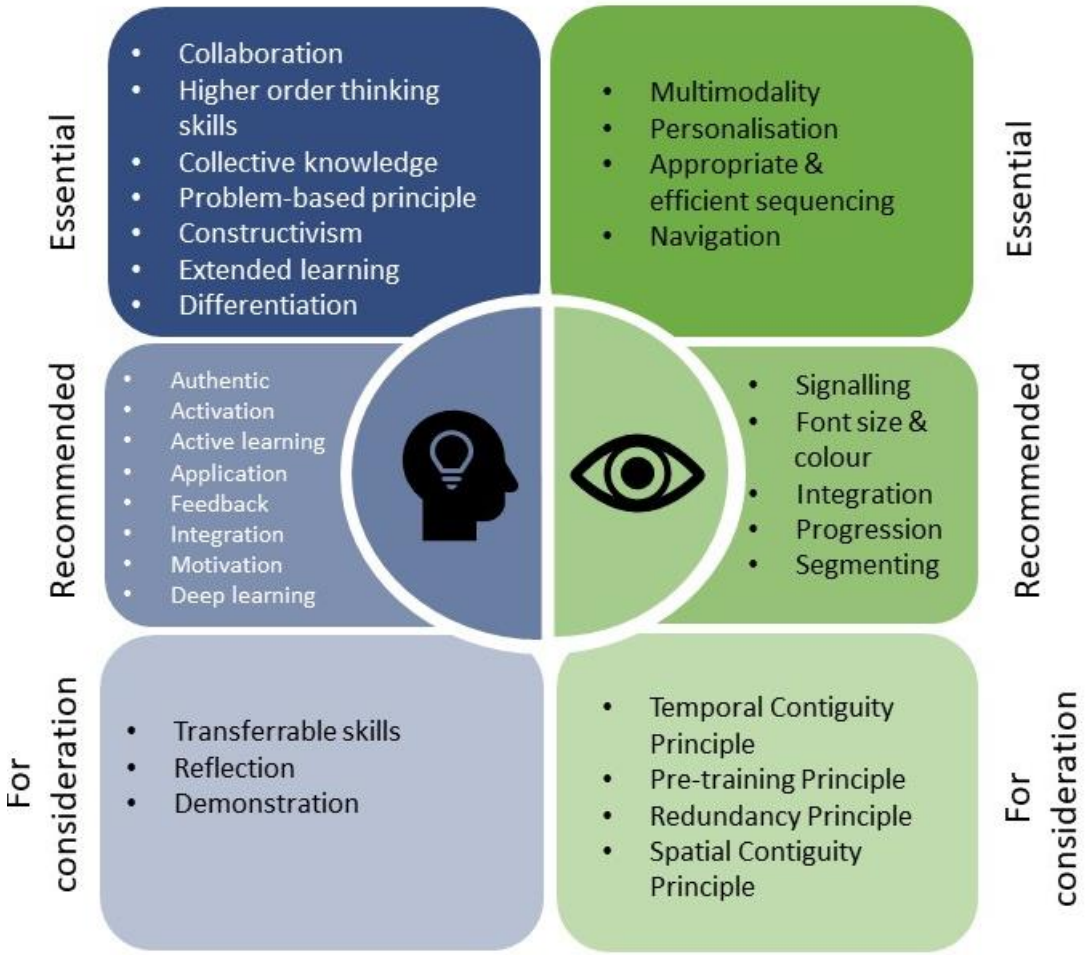

Figure 2-4: Key pedagogical and visual presentation principles for online learning material design and development derived from local and global quality guiding documents

This framework divides the principles into three categories. The *Essential* category contains pedagogical and visual presentation principles that appear in eight or more of the QGDs. These could be viewed as non-negotiable and should be at the forefront of the IDs' minds when they design and develop OLM. The *Recommended* category contains pedagogical and visual presentation principles evident in five to seven of the 10 QGDs and should enjoy sufficient consideration during the design process. The third category (*for consideration)*, captures principles shown in one to four of the QGDs, suggesting that they are simply nice to have.

The PVP framework can be used as a tool to either enhance or assure quality of OLM, or both. When employed as a quality enhancement tool, it is used during the design process (on

microlevel), as opposed to a quality assurance tool, where it is usually employed after the OL programme has been launched. Also, the PVP framework can provide a basis for determining the minimum requirements for OLM to be effective and engaging when OL programmes are offered.

Moreover, the PVP framework can be introduced on a practical level to key role players in the development of OL programmes – particularly subject matter experts (SMEs), lecturers and policy/decision makers – to raise awareness and provide an overview of expectations.

2.6 LIMITATIONS OF THE FRAMEWORK AND THE STUDY

As with any framework, researchers must "grapple with inherent weaknesses" (Archambault et al., 2022:188). Firstly, quality (of instructional design) is a vast and messy topic, difficult to encapsulate. Although I have focused on quality in terms of pedagogical and visual presentation principles grounded in theory and supported by literature, there are invariably other aspects/principles scholars could rightly focus on or might organise differently. I do not claim that this is an ultimate truth, and in line with the paradigm within which I worked, it remains an interpretation of priorities. It should be compared to the reality of IDs working in the Global South, which I did in the manuscript that follows.

Another limitation of the PVP framework is that it is compiled predominantly from Global North sources, and it does not consider institutional context or student profile. It is hoped that other scholars will build on this study within their particular contexts.

Thirdly, when used as quality assurance tool, a limitation thereof is that is does not have weightings. I intend to build on this study in my PhD to add a quantitative dimension to what I found here.

2.7 CONCLUSION

IDs should consider pedagogy and visual presentation principles at the onset of conceptualising a new OL programme. Selecting and crafting learning activities and resources should thus be done intentionally and not in an 'add-on' fashion, as echoed by Aluko et al. (2021:8):

> *"It is important to note that quality issues are thought about throughout the design process, and not as an afterthought"*

To do so, IDs have to peruse the content and information thoroughly to look for opportunities to employ effective learning activities. When they craft OLM, they should adhere to basic visual presentation principles as set out in the PVP framework.

The pedagogical and visual presentation of OLM plays a crucial role in the quality of OLM, and inherently in OL programmes. In the Global South, where the instructional design profession is still new, guidance as to quality in terms of pedagogy and visual presentation is needed. The key pedagogical and visual presentation principles elicited in this study can be used as a guide by HE IDs to design and develop effective and engaging OLM for students.

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CHAPTER 3: MANUSCRIPT 2: TRANSLATING QUALITY INTO PRACTICE: INSIGHTS FROM SOUTH AFRICAN INSTRUCTIONAL DESIGNERS

ABSTRACT

The instructional design profession is emergent in the African Higher Education landscape. While research on instructional designers' practices in the Global North is available, there is a deficit in research focusing on the practices of these practitioners within the African context. Although there are similarities in educational practices across the world, the contextual factors in specific contexts act as determinants for particular approaches. With the quality of online learning constantly being scrutinised, consideration of the views of instructional designers is central, since they design and develop the material for online learning. This paper thus provides insight into how some experienced South African instructional designers view and translate quality when they design and develop online learning material. Following a qualitative research approach, in-depth interviews were conducted with nine experienced instructional designers in South Africa. While findings substantiate to some degree my assumption that instructional designers employ standardised quality-ensuring tools, it emerged that a rather eclectic approach is followed, drawing from various instruments when they design and develop online learning material. Establishing 'human connectedness' seems to be a top priority and they do so by the intentional incorporation of teaching presence and collaborative learning activities. The quality principles mentioned by participants coincide with the community-of-inquiry model ensuring sound practice from a pedagogical and visual design point of view.

Keywords: Community of inquiry; curriculum design; instructional design; online learning material; pedagogy; visual design

3.1 INTRODUCTION

Online learning (OL) in South Africa and worldwide has grown exponentially in the last decade. It has become increasingly common for higher education institutions (HEIs) to employ OL in response to its ever-increasing demand for programme offerings combined with geographically dispersed student bodies (Sun & Chen, 2016; Wolhuter & Jacobs, 2021). OL, also referred to as open, distance, flexible, or e-learning, is employed by HEIs to extend access in response to the demand for tertiary learning beyond traditional campus-based learners (Ossiannilsson, et al., 2015). Furthermore, it is offered on a variety of platforms using different approaches. Broadly speaking, OL means learning that occurs via web-based services and can be synchronous, asynchronous, or a combination of the two (Timonen & Ruakamo, 2021). For the purpose of this paper, I consider OL as all teaching and learning activities that are designed and mediated digitally in blended- or distance-learning programmes.

Although the quality of learning material is an important success factor for all learning programmes, it is even more so with programmes offered online, since the online learning material (OLM) becomes the major source students engage with to learn (Prempeh & Appiah, 2017; Sun & Chen, 2016). In the case of 100% asynchronous delivery, in the absence of a lecturer or facilitator, OLM becomes even more significant. Masoumi and Lindström (2011:31) refer to OLM as "the heart of any online learning programme" and highlight the importance of employing OLM "creatively and constructively". As such, OLM translates into *how* teaching and learning are structured and crafted (Masoumi & Lindström, 2011) to facilitate students' cognitive structures and make learning effective (Merrill, 2009). Delivering effective OLM "takes time, effort, and skill" (Morrison & Anglin, 2012:244), described by Karthik (2019:1538) as an "art". The focus should be on crafting learning activities that require 'mental engagement' and active participation from students (such as reflection activities, scenarios, discussion forums) rather than on resources that merely require of students to read or watch a video, PDF or text on-screen (Hosie, Schibeci & Backhaus, 2005).

Academics and field specialists such as lecturers and subject matter experts (SMEs) are mostly not grounded in online pedagogy (Baldwin & Ching, 2019; Casanova & Price, 2018). Subsequently, HEIs often employ instructional designers (IDs) who are considered "knowledge workers", to perform this function (Rabel & Stefaniak, 2018:48). IDs collaborate with SMEs; apply instructional design models, multimedia principles, and learning theories; and utilise relationship-management skills to design and develop OLM (Rabel & Stefaniak,

2018). This is often explained by referring to the widely accepted ADDIE model (Dick & Carey, 1996), denoting Analysis, Design, Development, Implementation and Evaluation. In the analysis phase, for instance, IDs, together with SMEs, analyse the profile of the envisioned student, the content and the institutional context where the OL is to take place. This would then inform the design and development phases, which is the essence of an ID's daily practice. Activities that IDs perform during the design phase include, among others, aligning outcomes with content and assessments, as well as planning on how to convert paper-based text to interactive OLM. IDs work from this planning to actually craft these OLM with the help of technology in the development phase. The implementation phase entails the actual 'launch' of the learning material and the evaluation phase seeks feedback about the learning experience, whereafter appropriate amendments are made for the next round. IDs play a lesser role in the latter two phases. Although listing the phases suggests a linear nature, ADDIE allows the ID to engage with the different phases in a nonsequential, iterative manner (Brown & Green, 2016) towards designing effective and engaging OLM.

It must be emphasised that, different from traditional learning material, in the absence of a lecturer, OLM does not only significantly influence the overall quality of OL programmes (Karthik et al., 2019), but is also fundamental to the student's learning experience and success. The OLM now constitutes interactions that would typically take place in the classroom: student-student, student-content and student-student activities (Morrison & Anglin, 2012). The design practices of IDs should therefore be underpinned by sound online pedagogical principles (Margaryan, Bianco & Littlejohn, 2015) to enable the student to master the outcomes of the programme.

To build OLM based solely on pedagogical principles will not suffice. Literature in the field of OLM design and development (Mayer, 2001; Mayer, 2017; Bader & Lowenthal, 2018; Sharma & Alam, 2022) points towards the importance of visual presentation to be included in the design and development of OLM. Evidence from cognitive psychology supports the notion that pictorial arrangement of elements (presented to students in OLM) affects their ability to discriminate and organize information and therefore strongly influence students' cognitive processing (Guilford, 1975; Mayer, 2021; Rosar & Weidlich, 2022). Thus, how information is communicated to learners influences the learning process significantly (Ramlatchan, 2019). For instance, consideration of the emotional aspect of design, including expressive aesthetics influences motivation and mental effect (Heidig, Müller & Reichelt, 2015; Schneider, Nebel &

Rey, 2016; Um et al., 2012). Indeed, authors such as Choi (2004) and Hu (2008) point out the learning benefits of appropriate emotions and subsequent motivation for students who have to learn in the absence of a face-to-face learning and teaching opportunities. Visual design that allows for personalised OLM contributes to a positive learning experience.

Countless studies on establishing and promoting quality in the design and development of OLM have been done over the last decades, resulting in the establishment of principles, guidelines and frameworks (Masoumi & Lindström, 2011), often rolling out as quality guiding documents (QGDs) such as Blackboard Rubric™,[4] Quality Matters Rubric™,[5] and Open SUNY Course Quality Review Rubric[6] (Martin et al., 2017). Nevertheless, Ertmer, York and Gedik (2009) argue that these QGDs are of little value if IDs do not use them in their everyday practice. While Galyen, Culbertson and Chuchran-Davis (2020) point out that excellence in instructional design is dependent on the *application* of QGDs, critics argue that QGDs are too structured (Ertmer et al., 2009; Gordon & Zemke, 2000), too linear (Ertmer et al., 2009; Silber, 2007) and/or too procedural (Ertmer et al., 2009; Jonassen, 2008) to be of any practical use. Furthermore, despite the existence of these QGDs, there appears to be a lack of cognisant, widespread application in the ID work environment, and there seems to be uncertainty as to whether, how and when these QGDs are applied in practice (Thompson-Sellers & Calandra, 2012; Sugar, 2014). Martin et al. (2017) subsequently call for research on specifically how IDs implement and apply standards and propose focus groups and interviews to do so.

Only recently have studies attempted to develop a more formal understanding of *how* IDs apply or translate such QGDs into their design practices (Ertmer et al., 2009; Rowley, 2005; Thompson-Sellers & Calandra, 2012), and none of the studies were done in a developing world context. This constitutes a gap in the knowledge. To add, the ID profession is in its infancy stage at South African higher education institutions (HEIs), as at other African HEIs (Pallitt et al., 2018). What could not be established from the limited literature is the approach taken by IDs within the context of developing countries such as South Africa with its own particularities and challenges (Steyn, 2021). Furthermore, each educational system, such as SA HE, calls for its own contextual factors to be considered and includes, among others, the

4 https://www.blackboard.com/resources/are-your-courses-exemplary

5 https://www.qualitymatters.org/sites/default/files/PDFs/StandardsfromtheQMHigherEducationRubric.pdf

6 https://oscqr.suny.edu/

demographics, geographics and socio-economic status of the target group (Steyn, 2021). The responsibility rests with IDs then to design and develop OLM around these contextual factors to be responsive to the needs of their target audience.

In order to address this gap, this study aims to gain insight into how South African HE IDs view quality and how they translate quality into their practices when they design and develop OLM for their target audience. More specifically, I sought to provide an understanding of what they regard as important pedagogical and visual presentation quality indicators for OLM and, additionally, how they go about in translating quality in their day-to-day setting. The study will not only contribute to the body of knowledge with regard to quality in instructional design practices, but also to provide a roadmap to ensure and promote quality when they design and develop OLM.

3.2 METHODOLOGY

I worked from the assumption that different interpretations regarding the quality of OLM exist, and IDs make sense of their realities based on their experiences (Merriam & Tisdell, 2016). Following a qualitative research design, I employed semi-structured, virtual interviews via MS Teams to gain rich, in-depth information (Adams, 2015) on what IDs regard as quality, and how they translate it during their design and development practices.

Initially, I employed a purposive sampling method, since this method allows one "to select respondents that are most likely to yield appropriate and useful information" (Kelly, 2010:317) and also because my aim was to increase the depth of understanding (Palinkas, Horwitz & Green, 2015). I thus reached out to fellow instructional designers in the HE field to enquire whether they were willing to participate in my study. The inclusion criteria for this study required that the participants had at least three years' experience in the design and development of OLM for asynchronous and/or synchronous learning. A total of 25 potential participants were contacted via e-mail, and after repeated follow-ups, nine IDs indicated their willingness to participate in the study.

I followed Turner's guidelines (2010) to construct effective research questions for the semi-structured interviews, based on literature as well as the PVP framework (cf. 2.5) developed in manuscript one. An interview guide with set questions (Appendix E) ensured a moderate level

of consistency (Whiting, 2008) in data generation, yet allowing me to probe and clarify when responses where not clear.

Upon ethical approval from my institution's research committee, gate-keeper permission (Appendix B) was granted from the HEIs where I intended to conduct the interviews. Informed consent (Appendix D) was obtained from all participants (Merriam & Tisdell, 2016) in which I made it explicit that they had a choice in taking part and were free to refrain from responding, or to withdraw from the study at any stage. All participants were assured about the confidentiality of the data and that their responses would be anonymised (using pseudonyms).

The table that follows provide detail about the participants:

Table 3-1: Detail about participants

Participant	University	Formal ID qualification	Gender
A	1	Yes	Female
B	2	Yes	Female
C	3	No	Female
D	2	No	Male
E	1	No	Male
F	4	Yes	Female
G	3	No	Female
H	4	No	Male
I	4	No	Female

Participants were e-mailed pre-interview materials (Appendix E) to prepare for the interview, if they wanted to. Each interview lasted between 30 and 40 minutes and were simultaneously recorded and transcribed via the built-in Microsoft Teams tool. To enhance trustworthiness, I employed member checking to check and confirm results (Merriam & Tisdell, 2016).

I read the transcripts carefully and multiple times to highlight and extract significant statements, specifically those related to quality principles that appeared to frame participants' decision-making. Themes were derived from the raw data in an inductive

manner (Merriam & Tisdell, 2016). I used a large sheet and sticky notes to group the themes (cf. Figures 4-2 & 4-3), and to organise my thinking and argumentation. The finding presented below are based on my interpretation of the data within the themes that I identified. By including the actual quotations of the participants, I demonstrate that findings are based on real data (Merriam & Tisdell, 2016).

3.3 FINDINGS

Seven themes emerged from the interviews. In the following sections, each of these themes will be discussed.

3.3.1 USING ESTABLISHED STANDARDS AND PRINCIPLES TO ENSURE AND PROMOTE QUALITY

Davis and Frederick (2020) point out that if online programmes are not designed according to best practices, students are likely to perform less optimally. From the interviews it was clear that all the participants were familiar with and used some form of QGDs to guide their design and development practices. How they used them, however, differed.

Most participants reported their institutions to have extensive and quality guiding documents, derived and adopted from established standards and rubrics to assist them with designing and developing OLM. In some cases, these documents are in the form of checklists, used as a QGD, and mainly in a 'tick-off' manner. Participant #C, for instance, shared that "[*checklists] allows us to make sure that our courses are quality assured*". Yet Masoumi and Lindström (2011:28) warn against quality instruments employed in a "mechanistic" way, because when used in such a way, quality control then becomes a "top-down" approach with roots in "industrial mass production". Similarly, Martin et al. (2017:2). note that while checklists could be understood as "a tool to enhance quality", a standards-automatically-lead-to-better-quality [own term] mentality should be avoided. Other participants indeed reported that although their institutions had formal checklists available, they did not use them in a tick-off fashion when they were "*in the zone*" (Participant #G) of designing OLM. Rather, participants seemed to use QGDs more intuitively. Participant #A, explained, "*I don't always think about these things [QGDs]*" when working on OLM. This was echoed by Participant #I, "*I mean, we've got the QM checklist, but when I look at the course, I don't use it. I look at it based on my own sort of framework*."

Participants also reported that they followed a varied approach in that they drew from an assortment of sources. Participant #I, for instance, explained that he drew from various QGDs to distil the best-quality principle for that specific design situation. Participant #B even referred to his own "*cheat sheet*" when he designed and developed OLM.

Yet, some participants reported that their institutions did not have definite standards to guide them in their design practices. Participant #H shared that standards are only "*emergent*" at his institution, while Participant #D mentioned "*unspoken standards throughout the institution*", yet not captured formally. Participant #F remarked, "*we don't have a set of fixed set of rules … at our institution, we've got many hens that lay colourful eggs*", suggesting that the checklist is compiled rather randomly and not always validated.

Literature suggests that IDs can benefit from using QGDs to ensure and promote quality when they design and develop OLM (Baldwin & Ching, 2019; Martin et al., 2017). This was echoed by some of the participants who acknowledged the usefulness of the QGDs they currently employ (e.g. Universal Design Principles,[7] Arena, Blended, Connected Learning Design,[8] Achieve[9] and Quality Matters Rubric™[10]) both during and after their design practices. Participant #C clearly stated that QGDs are "*very useful*", while Participant #A deemed her institutional checklist as "*essential*".

3.3.2 *Critique on current instruments*

Even though participants confirmed that QGDs of different kinds could be useful, scholars warn that they should not be seen as a "one size fits all" (Ossiannilsson et al., 2015:53) and should be adapted to a specific institution to be effective (Bari & Djouab, 2014). Masoumi and Lindström (2011:35) particularly note that Western-oriented QGDs cannot be employed "as is" and need to be "culturally enhanced" to suit the needs of developing countries. This is significant, since the aforementioned QGDs all emanated from the Global North and the

[7] https://universaldesign.ie/what-is-universal-design/the-7-principles/
[8] https://jus.shef.ac.uk/jnldigitallearning/2020/07/12/abc-arena-blended-connected-learning-design/
[9] https://www.achieve.org/who-we-are
[10] https://www.qualitymatters.org/sites/default/files/PDFs/StandardsfromtheQMHigherEducationRubric.pdf

applicability of these instruments for Africa, and especially South Africa, needs to be considered.

Participants in my study indicated that they are in support of QGDs being contextualised, although it seems mostly to not be happening at their institutions. Participant #D explained that although they used an instrument that had been developed in an "*inhouse*" fashion, and derived from one of the above-mentioned instruments, it still "*lacks the [institution's name] context*". Participant #I similarly discussed using the QM Rubric™ at his institution:

> *QM you know, is useful because it's an international, sort of recognised rubric and it gives a nice base to work from. But it comes from an American context and sometimes it may not necessarily be useful for what we need in our context and in our space.*

A number of participants challenged the pedagogical effectivity specifically of the QM Rubric™. Participant #D indicated, "*I don't think it's a bad rubric, but it's not as comprehensive as I would like it to be in terms of pedagogy*". Her view resonates with those of Hosie et al. (2005) and also Debattista (2018) who regard the lack of pedagogical underpinning in quality instruments as problematic. Participant #D then continued pointing out that "*it's more of a technical type of thing, it's a technical checkbox thing*". Participant #I challenged the use of tick box rubrics, because "*you can get your course to 'pass' the rubric, but it actually ends up not necessarily being a good course*". These statements correspond with Masoumi and Lindström's (2011:28) concern that many QGDs are merely an "assemblage of benchmarks", lacking "sound theoretical grounding". OL programmes are often viewed at face value and rubberstamped as good quality when they simply adhere to basic, general criteria. However, when the programme and its OLM are scrutinised, they often lack solid online pedagogical principles.

3.3.3 *Consider curriculum design principles*

Curriculum design refers to *what* students learn in their programme, while instructional design is focused more on *how* they learn (Chugh, Ledger & Shields, 2017). Curriculum design takes a broader view towards key factors, such as educational standards and content selection, whereas instructional design has a narrowed scope and looks at specific teaching and learning methods (McDonald & West, 2021). Yet many of the participants viewed

curriculum design principles as quality indicators for their instructional design practice. Three curriculum design focus areas emerged from the interviews and will now be discussed.

3.3.3.1 ALIGNMENT

When participants were probed about what they regarded as quality of OL, *alignment*, a well-known curriculum design principle, was indicated as the most important. Alignment suggests that there is a definite link between the outcomes, content, learning activities and assessment (Biggs, 1996) and part of its appeal lies in the simplicity of the concept (Kandlbinder, 2014). The success of any learning experience, whether in a face-to-face or online setting, is determined by the degree to which there is adequate alignment between the above-mentioned elements (Reeves, 2006). Participant #F highlighted the importance of alignment through an analogy, "*You can't expect from me [referring to the student' assessment] to show to you that I can bake a cake if you ask me in your outcome to list the ingredients of a cake*". Participant #A emphasised that one should consider, "*What is the key thing that students need to understand and how do we check that they actually achieved that?*" Participant #G found it useful to "*work with backward design where you start with your learning outcomes and build your programme from that*". The backward design principle stems from Ralph Tyler's seminal model (1949) in that one works backwards in first determining the outcomes, thereafter appropriate learning activities, followed by assessment strategies. Khumalo (2018:32) views alignment as "powerful", while Boyd and Ralston-Berg (2020:64) regard alignment as "essential for success" when IDs design and develop OLM. It is thus clear that alignment is foremost in IDs' minds during their practice, and influences how they perceive quality.

3.3.3.2 TIME ALLOCATION

A second curriculum design principle that was emphasised by several participants as important quality indicator was *time allocation*. The importance of time on micro-level was, for instance, explained by Participant #D (*looking at things that give students an idea of the amount of time it will take to complete*), while Participant #B mentioned time allocation on a macro-level (*components I look at in terms of quality is determining whether the stated notional hours actually coincide*). The link between time allocated as per notional hours that again links with the credit value of modules in the South African context (NADEOSA, 2021) and the estimated real time required for activities clearly are regarded as a quality matter.

3.3.3.3 APPROPRIATE QUALIFICATION LEVEL

A third curriculum design principle mentioned by participants relates to the adherence of online programmes to *appropriate and specific qualification levels and standards*. Participant #D noted that "*the degree of alignment to standards"* was *"a big, big thing*", while Participant #B reiterated the importance thereof (*Quality components that we always look at is the NQF level … whether the module adheres to that level*). Each country has its own qualification levels standards and/or frameworks, which are usually promulgated by a governing body. In South Africa, The Higher Education Qualifications Sub-Framework (CHE, 2013) details different levels of higher education qualifications.

Chugh et al. (2017:7) argue that "good curriculum design, for distance education is imperative for success" and that it is expected of IDs to "carefully" consider and apply basic curriculum design principles. From the interviews it seems as if participants drew from both instructional design as well as curriculum design models, suggesting that IDs follow a varied and "eclectic approach", which is often the case (Brown & Green, 2016:8).

3.3.4 BUILDING IN HUMAN CONNECTEDNESS

A fourth theme that emerged from the interviews was that of *human connectedness*. Connectedness is defined as the perception of belonging (Lee & Robbins, 1995) and realised when a person experiences a sense of social relationship and integration (Kuwabara et al., 2002). Feeling connected is regarded as an essential component of the student experience (Hehir, et al., 2021) in that it contributes to academic success (Wilson, 2018) and is believed to increase the likelihood of student health and wellbeing (Arslan, 2021).

Feeling connected becomes critical in OL, since interaction in this environment is mostly via text on-screen, which is often without affordances such as visual, body-language, and tone-of-voice cues (Dzubinski, 2014). Arslan (2021) points out that students in an OL space can easily feel isolated and lonely and that a lack of connectedness can affect psychological health and wellbeing negatively. Without any physical interaction, it becomes challenging to establish a feeling of connection in the online classroom (Purwandari, Junus & Santoso, 2022). Participants reported that they focused on two main concepts to foster human connectedness in the OLM they designed and developed, namely establishing teaching presence (TP) and incorporating collaborative activities.

3.3.4.1 TEACHING PRESENCE

In synchronous OL, TP refers to the physical facilitation of online learning through encouraging, and guiding students and is dependent on the person herself (Richardson et al., 2015). Establishing TP in asynchronous settings are more challenging, but are viewed just as important, or even more so in the absence of a real-time facilitator (Dzubinski, 2014; Purwandari et al., 2022). This is also how participants felt when they commented on the significance of TP in OL. Participant #F explained that "*it's about thinking how to bring in their [lecturer's] presence through to the online space*", while Participant #I posed the question: "*how do you [ID] establish teaching presence?*". Several participants indicated that key in establishing TP lies in communication. They used various communication platforms and tools, giving clear instructions and using "*bridging text*" (Participant #I) to "*build in the voice of the lecturer*" (Participant #A). For Participant #F it was important that "*communication channels to communicate with students need to be in place*" and to "*tell the students what it is that they need to do with this piece of content and also give them clear instructions on what they have to look at*". Participant #H viewed it important to consider whether "*those resources [are] scaffolded with some kind of instructional text*", sharing as example that, "*instead of [merely] a bunch of PDFs on a page, are those PDFs introduced*?". He emphasised that one should aim for "*quality*" communication by communicating "*upfront and in a consistent fashion*".

Another communication principle to establish TP is to build in "*the voice of the lecturer*" (Participant #C) – writing in a conversational matter. Participant #C emphasised the importance of the "*tone and language*" and "*how [language] is used*". Dunlap and Lowenthal (2018:84) advise to communicate in an informal and personal manner and be "concrete and explicit with instructions for all activities."

Participants believed prompt and thorough feedback would contribute to TP (*you need to have a system where either you or a teaching assistant or a tutor is answering questions* – Participant #H; *are they [lecturers] doing it in a comprehensive way rather than just like a 'yes' or 'no'* – Participant #H. These responses resonate with Dunlap and Lowenthal (2018:85) when they state, "feedback is essential, and be specific in your feedback".

3.3.4.2 COLLABORATIVE ACTIVITIES

Participants identified collaborative activities as a way to foster human connectedness in OL. Participant #C believed that students should be "*co-teachers*", suggesting that IDs should

"*look for opportunities where students can share their views and learn together*". Participant #H also emphasised the importance of opportunities "*where [students] will work in a group to constructively work towards a desired output*". He stressed the importance of building knowledge in a collaborative manner, and to consider "*can [students] contribute to resources? Can they [students] collaboratively build things, like on Google Docs?*". However, Jung, Shin and Zumbach (2021) suppose that students find it difficult to build accurate knowledge during collaborative knowledge construction and therefore calls for adequate instructional design of collaborative activities.

From the above it seems that IDs employ various mechanisms of establishing TP and collaboration to establish human connectedness in the OLM they design and develop.

3.3.5 IDENTIFYING AND EMPLOYING PEDAGOGICAL PRACTICES

Pedagogical practices are concerned with the methods related to teaching and learning (Altuwairesh, 2021) and in OL, pivotal in creating effective and engaging OLM (Merrill, 2009). Hosie *et al*. (2005) adopt a learner-centred approach in that they link pedagogy with learning activities; thus, creating OLM which requires of the learner to do actively rather than focus on teaching/instruction activities.

Participants clearly distinguished between online and face-to-face pedagogy during interviews. Participant #G, for instance, explained that "*pedagogy plays a huge role, but online pedagogy is a whole sort of new ball game*". Participants identified and described specific online pedagogical mechanisms they employed when constructing OLM to solicit mental engagement from students, and I discuss each separately.

3.3.5.1 PROBLEM-BASED LEARNING

It emerged from the interviews that quite a few participants used problem-based learning to "*make learning stick*" (Participant #A) as opposed to rote learning. Participant #E indicated that she did not "*like courses where there's a lot of rote learning*" and rather "*use[d] learning activities that make students think – apply their minds and apply the knowledge in a real-world context*". Participant #D added, "*You should not throw abstract information at students that comes out of the blue to them and has no relevance to their daily lives*". Indeed Kassymova et al. (2020) explain that problem-based learning should challenge students to apply their knowledge to real-world problems, and by doing so, develop cognitive processes.

3.3.5.2 Activation principle

A number of participants commented on how they used the activation principle (Merrill, 2002) to build a link between what the student knows and new knowledge. Participant #D always considered this principle and reflected in her statement, "*something that will truly stimulate the student and hook into their own experience in terms of activity*". Participant #F stressed the importance of using the activation principle, particularly for first-year students, "*lecturers forget that students come into a first-year module and don't know the terminology, but you just blabber on and they don't know what the hell you're talking about. There is no scaffolding [between new and prior knowledge] so you lose your students within the first week*".

3.3.5.3 Applying knowledge

Opportunities to apply knowledge was another pedagogical mechanism mentioned by Participant #F to happen at the end of a learning experience (*you do eventually get to the point where they have to apply all of that information that you've given to them after the module*). Participant #D advocated "*multiple opportunities for students to practice what they have learnt*". Application of knowledge was recently identified by the Association for Educational Communications & Technology (AECT) (Piña, 2017) as one of ten quality principles that make an online programme effective. Students should have "integral opportunities to apply new learning" (Piña, 2017:12), both independently and collaboratively.

3.3.5.4 Critical thinking and deep learning

There was a strong voice towards opportunities for students to develop higher-order thinking skills, or "*deeper learning*" as both Participants D and E noted. Higher-order thinking is interchangeably linked with critical thinking where students are expected to make decisions and judgements (Tathahira, 2020). Critical thinking is an important skill required in the world of work and employment, but very challenging to develop among online students (Tathahira, 2020). Participants indeed employ various ways to foster critical thinking in students: Participant #E included a research component where appropriate, while Participant #B built in opportunities for students to "*create something collaboratively*".

3.3.5.5 Interactivity

The majority of participants mentioned interactivity as yet another pedagogical principle and quality indicator when they design learning activities. Participant #D explained, "*there needs*

to be a lot of student engagement – things for the students to do themselves – rather than just passive information dumps". She emphasised that "*there should be critical thinking, mental engagement, not merely the clicking of a mouse*". Participant #H also referred to "*engagement*", advocating the need to "*create different ways of engaging with materials so that it's not just a huge, long list of videos and readings*". Their views align with that of Dunlap, Sobel and Sands (2007), expressing that it is not enough that students merely access information; rather, there should be cognitive processes and mental engagement by which the student deals with that information. The role and importance of interaction have been well documented in learning theory and research; it is the standard for deep and meaningful learning, and critical in OL (Husna & Fajar, 2022; Davis & Frederick, 2020; Piña, 2017).

3.3.5.6 VARIETY OF ACTIVITIES

In addition to the importance of learning activities to be interactive, participants rate variety thereof as quality indicator. Said Participant #D, "*there should be a good mix of video, graphics, activities and text*", implying a balanced combination between passive (reading, listening, viewing) and active (rehearsing, trying) learning activities. The AECT also advocates a mixture of passive and active learning activities, further stating that it should be selected according to students' levels of knowledge, experience and ability and also suitable to the content (Piña, 2017).

3.3.5.7 CHECKPOINTS

The last pedagogic quality indicator identified by participants that links to cognitive presence is to have certain check points, which could be interpreted as mini-self-assessments. Participant #A thought it was important to build in small "*checkpoints*" to see if a student had worked through the content. These are not elaborated activities such as assignments, but merely a "*short activity such as multiple choice or one sentence answers … Or something to check how they are doing ? ... small things like that*", explained Participant #E. Participant #F also felt that "*you should make sure that you give them an opportunity to show you or to prove to you that they have interacted with the content … even if it's a short quiz*", and echoed Participant #G, who posed the question for consideration, "*Are you building an opportunity for those checks in the online realm?*".

From the above, it is evident that participants employ and rate pedagogy critical in the design and development of OLM. They use specific pedagogical mechanisms to elicit mental engagement among students, which mostly roll out as learning activities. Authors such as

Karthik et al. (2019) and Heiser and Ralston-Berg (2019) are of the opinion that the quality of instructional design directly depends on learning theory and pedagogy, hence OLM should be structured and crafted in such a way to facilitate students' cognitive structures to make learning effective.

3.3.6 IDENTIFYING AND FOLLOWING VISUAL DESIGN PRINCIPLES

Visual design and aesthetics have a profound impact on how students perceive information and learn, judge credibility and usability, and ultimately assign value to an online experience (Huibregtse, 2013; Reyna, 2013). Recently, Sharma and Alam (2022) even found significant correlations between aesthetic appeal of OLM and positive student emotions such as pleasure, excitement and being in control.

3.3.6.1 LOOK AND FEEL

Participants from this study rated a collection of visual design principles as quality indicators. The most important visual design quality principle identified by participants relates to the look and feel of OLM. Most participants viewed the use of appropriate colour and fonts as cardinal (*[visual presentation is] all about using fonts and colours in a way that grabs the students' attention* – Participant #H; *when I look for quality, I look for fonts and the use of colour* – Participant #B). More specifically, participants reiterated the notion of less is more *(stay away from funny bunny fonts, stick to the basic fonts* – Participant #F; *colours should be restricted* – Participant #F; *not using too much colour* – Participant #D).

Participants considered that fonts and colours should be used in a consistent fashion to create a professional look and feel. Towards this, participants agreed that OLM should include institutional branding (*but generally, we have to stick to the university colours to be professional* – Participant #A; *[OLM has] a lot to do with visual design in terms of, you know, branding and things like that and obviously creating a specific institutional branding* – Participant #G). Some participants however, advocated "*a bit of leeway*" (Participant #G) when the need arise to use additional colours. Scholars agree that look and feel is key to effective and engaging learning and cannot be ignored (Bader & Lowenthal, 2018; Ghai, 2022; Huibregtse, 2013; Reyna, 2013).

3.3.6.2 COHESION AND LOGICAL FLOW

It emerged that IDs who took part in the interviews viewed it as important that OLM has cohesion and logical flow. Participant #B, for instance, referred to "*how content is structured*", while Participant #D highlighted the need to "*make visual sense even as the student gets into the course",* and not looking like "*a jumble to students*". Participant #D also believed that following the "*same recipe*" throughout a programme improves the overall cohesiveness. Participant #A considered cohesive layout as essential and stated that she thought about "*layout, the hierarchy of how things are presented. Is it logical? Will it make sense to the student?*". Participant #H considered the questions: "*Are the pages well-laid out? Is the flow good?*", referring to the importance of a cohesive layout.

3.3.6.3 THE MULTIMEDIA PRINCIPLE

Participants mentioned the multimedia principle as a third quality indicator. The multimedia principle stems from the cognitive theory of multimedia learning by Mayer (2001) which holds that people learn better from words and graphics than words alone. It is also echoed by Medina (2008) when he states, "We see with our brains", and therefore the more visual an input, the more likely information will be recognized and recalled.

This principle is mainly applied when IDs employ the multimedia principle (Mayer, 2001), stating that people learn better from pictures and words than from written text alone. This principle manifests when IDs combine words (spoken or printed) with pictures (static or dynamic) to create videos, infographics, animation, computer-based interactive simulations or activities (Mayer, 2017) with the help of specialised software (such as Articulate Storyline™, PowerPoint™ or Doodly™). Applying the multimedia principle in the creation of OLM, facilitates learning in a number of ways, including improved integration of new material with prior established knowledge (Mayer, 2008), and retention and transfer of knowledge (Issa et al., 2011). If IDs are not properly trained in the multimedia principle, "their multimedia piece [OLM] might interfere with the learning experience" (Rudolph, 2017:1).

Participants indeed shared that they employ the multimedia principle and rate it as a quality principle. Said Participant #F, "*If it is possible to put a hundred words in one picture, go for it!*". Yet she warned against using graphics as gimmicks in OLM: "*don't add hopping bunnies and bouncing balls just for the sake of it*". She was supported by Participant #A who explained, "*If you're going to use something [graphic], that can't just be there for the sake of it. It needs to be functional. So, if you have an image, does it have a purpose and does it add value*?"

Participant #I likewise stated, "*If you're using graphics, do the graphics speak to whatever the activity is about?*" Clearly, IDs employ the multimedia principle and feel strongly that graphics should be functional.

3.3.6.4 SEGMENTING PRINCIPLE

The fourth visual quality indicator mentioned by participants relates to Mayer's segmenting principle, namely that when information (in OLM) is presented in bite-sized, learner-paced segments, it encourages students to establish mental frames (Mayer, 2021). Participants were of the opinion that it was good practice to break up information into digestible sizes, referring to "*chunking*" (Participant #A; Participant #D). As explained by Participant #A, it is "*important to chunk things so that students are able to work through things in a way that is manageable*" and Participant #D added that she made sure that she was "*not throwing too many huge chunks of information at students*".

3.3.6.5 SIGNALLING

Signalling, another Mayer principle (2001), emerged from the interviews. Signalling is the means of using text, pictures or gestures to guide students' attention to essential information (e.g., headings, bold text, arrows, vocal cues) (Alpizar, Adescope & Wong, 2020). Indeed, scholars such as Jamet (2014) and Alpizar (2020) report positive effects of signalling on the attainment of learning outcomes. Yet others are sceptic whether signalling can help students to master learning outcomes (Mayer & DaPra, 2012). Participants, however, rated signalling as an important quality indicator when they compiled OLM (*so signalling is important and that's something I think of a lot* – Participant #A; *Are there proper headings?* – Participant #E; *the various activities that the students will do are sign posted* – Participant #E).

3.3.6.6 PRETRAINING

Yet another Mayer principle, *pre-training* (Mayer, 2001), surfaced during interviews. The pre-training principle is relevant in OL situations where the student tries to process essential or new information, but in the process, is overwhelmed by the cognitive system. In these situations, it is helpful if some of the processing can be done in advance (Mayer, 2010), hence the pre-training principle.

Participants conveyed various methods in which they follow this principle. For example, Participant #H applied the pre-training principle in stating learner outcomes beforehand (*Do they share things like course outlines?*). Both Participant #D and Participant #E mentioned

providing "*learning pathways*" prior and during the learning experience. Participant #F preferred the use of "*flow diagrams*" to "*make life easier*" for students.

From the above, it is evident that visual design is important to IDs I interviewed when they design and develop OLM. This is contrary to suggestions in literature that it is often neglected when it comes to the actual implementation thereof (Reyna, 2013).

3.3.7 *INCLUSIVITY AND ACCESSIBILITY*

Accessibility and inclusivity emerged as prominent themes among participants. While accessible design focuses on personalising OLM for specific people with disabilities (e.g. visual or auditory impairment), inclusive design considers a larger spectrum (e.g. location, situational handicaps, perspectives of people) and anything else that may hinder a student's ability to learn (Anurag, 2021).

All participants ranked *accessibility* as cardinal when they design and develop OLM. For example, Participant #E shared, "*it's [accessibility] is something that I feel very strongly about*" yet indicated that her institution is still in the process of employing it to the fullest (*so accessibility is something that we kind of are trying to push*). Similarly, Participant #A indicated that they "*started with the bare minimum*" and are only now "*starting to do the captions and transcripts and optics for images*". Although participants realised the importance of accessibility, they also seemed aware that it was challenging to implement (*it's a big, big task* – Participant #A). It is not only South African HEIs that face this mammoth challenge. In a recent study by Guilbaud, Martin and Newton (2021:7) it was evident that HEIs in the US also "wrestle with finding ways to meet the academic needs of postsecondary students with disabilities in the online environment".

There was a notable awareness among participants to consider differently abled people when they designed OLM (*We are very much aware that we have students with various disabilities* – Participant #C; *you have to keep in mind that you might have students in you class that have a problem that you're not aware of* – Participant #F; *you have to keep in mind that there are people that are colourblind* – Participant #F). Universal Design for Learning (UDL) principles are known to facilitate hands-on design and development of OLM, thereby widening access to a broader range of students with numerous abilities (Burgstahler, 2015; Tobin, 2014; Wynants & Dennis, 2017). Research has found that HE practitioners who implement UDL

principles enhance the quality of the learning experiences for all students, not only for differently abled ones (Guilbaud et al., 2021). It works from the premises that content is delivered through multiple modalities that offer multiple means to engage in learning, and in return, also provide opportunities for students to demonstrate their knowledge in multiple ways (Dell, Dell & Blackwell, 2015; Hollingshead, 2017). This might be the case for participants in this study as well, since more than half of participants reported they used UDL principles as visual design guidance when they created OLM. For Participant #C, UDL principles are crucial to improve access. (*So we follow the [institution's name] universal design for learning, which has somewhat become part of who I am.*)

Creating OLM that is inclusive is a relatively new challenge in HE OL that is gaining awareness among practitioners (Fenrich, Carson & Overgaard, 2018). This is also true for participants in this study, as voiced by Participant #H, "*we only started to investigate this last year and is only now starting to bring in elements of these practices*". Yet a number of the participants mentioned inclusivity when they compiled OLM. As explained by Participant #C, "*I would look at if it's [OLM] representational, not just you know, is it neat and tidy, but if it's also showing the African child, or the African pictures of Africanism*". For Participant #H, inclusivity reached further than the use of graphics,

> *so we look at what kinds of examples and case studies people are using. Are they talking about African history, but then only referencing, you know, to white European authors or are they actually bringing in African authors to discuss African issues?). He pondered upon "what kind of intellectual traditions are drawn upon, and are those purely taken from like the global North? Or are South African and African authors and scholars and forms of knowing also brought into the course?*

It seems evident that participants have students' interests at heart when they design inclusive and accessible, friendly OLM. This concurs with Davis and Frederick (2020:158), who feel that IDs have a "moral burden to exacerbate or mitigate societal inequities", further stating,

> *In a society where the benefits of earned degrees are not rewarded to everyone equally regardless of race, gender, socioeconomic status, sexual orientation, and abilities, it is essential to design quality online courses that set adult learners up for success before the course begins.*

3.4 DISCUSSION

This study was conducted to understand better what South African HEI IDs regard as quality indicators and how they translate quality into their daily design and development practices, specifically focusing on pedagogy and visual presentation.

When asked how they translated OLM quality, it was evident that most of them did it intuitively; not in a tick-off fashion. This corresponds with previous findings. For instance, Zhang, Schwier and Campbell (2005) found that, while IDs do make use of models, they do not rigidly follow them, nor do they spend a lot of time on them. Thompson-Sellers and Calandra (2012) found that experienced IDs incorporate theory intuitively during their daily practices, and it "becomes second nature to you" (Thompson-Sellers & Calandra, 2012:25).

Although most participants reported their institutions to have formal QGDs to guide them in their practices, most of them went beyond these to draw from a variety of sources; thus following an "eclectic approach" (Brown & Green, 2016:18). Following a varied approach aligns with what Dicks and Ives (2008:1) found, namely that experienced IDs "do not do their work by following established models", but rather "employ a set of cognitive tools that enable them to act as pedagogical conscience" when they perform design and development tasks.

3.4.1 COMMUNITY OF INQUIRY

While not all participants provided an explicit definition of OLM quality, they all provided insights into specific design quality principles of an OL programme. Participants' answers strongly revolved around the idea of cultivating an online learning community (cf. 3.3.4) and as such coincides with the community of inquiry (CoI) model (Garrison, Anderson & Archer, 2000). The CoI model is an attempt to nurture knowledge construction through the cultivation of various forms of "presence", namely teaching, social, and cognitive presence (Shea & Bidjerano, 2009). Although these three presences are intertwined, each presence plays a distinctive role and are foundational to the development of deep and meaningful learning in online programmes (Dunlap & Lowenthal, 2018). Figure 3-1 illustrates how participants' answers relates to the CoI model.

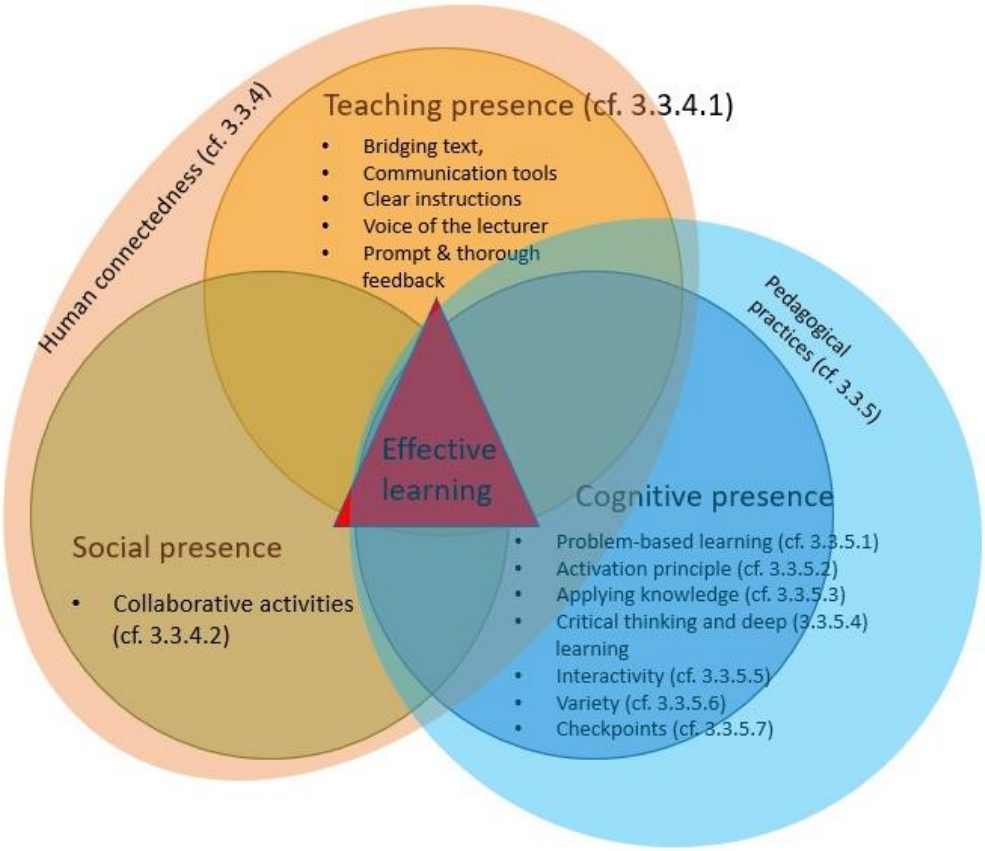

Figure 3-1: Community of inquiry model to explain participant responses in terms of human connectedness and pedagogical principles

Most participants discussed the need to establish human connectedness in the OLM the design and develop. One way of establishing human connectedness is to create TP (cf. 3.3.4). To establish TP, participants use a variety of mechanisms, such as bridging text, specific communication platforms, writing informally and providing clear instructions (cf. 3.3.4.1). Additionally, timely responses and feedback, as reported by participants, are also seen as mechanisms to foster TP within the CoI (Dzubinski, 2014; Hodges & Cowan, 2012). Establishing TP in OLM provides an opportunity for students to develop a feeling of connectedness and overcome issues of isolation (Hehir et al., 2021) and thus contribute to human connectedness. This calls for intentional design and is done with great care.

A second way to establish human connectedness is by incorporating collaborative learner activities to foster social presence (SP) (cf. 3.3.4.2). When looking through the CoI lens, SP refers to the degree of connectedness to others felt by students in an online environment (Garrison et al., 2001). SP aims to minimise the physical distance by helping students to

connect with one another, and make them feel that they are part of a supportive learning community (Lowenthal & Dunlap, 2014), and by doing so, reduce feelings of isolation (Altuwairesh, 2021). SP can also reduce differences between students and lecturers, improve academic ability, and contribute to learning performance (Aldheleai et al., 2020). Although there are a variety of ways to foster SP in OL (Dunlap & Lowenthal, 2018; Aldheleai et al., 2020), participants mentioned the incorporation of collaborative activities such as discussion forms, groupwork and icebreaker activities as their main mechanisms to do so. Participants were more focused on collaborative activities with the aim to build collective knowledge than with the aim to foster a community of practice or "cohesivity", as explained by (Pelz, 2010:111). Both, however, are important to establish SP in OL (Sun & Chen, 2016; Serdyukov, 2015).

The last concept of the CoI relates to CP. CP refers to how students interact with and process the content (encapsulated in OLM) of an online learning experience (Dunlap & Lowenthal, 2018) to construct and confirm new knowledge (Anderson & Dron, 2011). CP could be seen as a space in which students engage with content in a deep and meaningful manner that leads to enhanced conceptual understanding (Dunlap et al., 2007). CP can be related to the "the ways of representing and formulating the subject that makes it comprehensible to others" and involves "teaching processes" (Shea & Bidjerano, 2009:544) (cf. 3.3.5), which inherently link with online pedagogy. Participants in this study listed specific pedagogical principles (cf. 3.3.5) they employ, namely problem based-learning, activation principles, applying knowledge, critical thinking, interactivity, variety and checkpoints. Online pedagogy serves as the theoretical basis for effective online classrooms (Akyol & Garrison, 2008) and if used effectively, increases both students' cognitive processing and knowledge transfer (Serdyukov, 2015).

Also, although aesthetical consideration flows from fields of usability, graphic design and information architecture (Huibregtse, 2013) responses from my participants coincide largely with the field of cognitive psychology, specifically Cognitive Theory of Multimedia Learning (CTML) by Richard Mayer (Mayer, 2001). CTML is underpinned by the idea that when OLM is designed according to how the human mind works, it will more likely lead to meaningful learning than OLM that are not so designed (Mayer, 2014). CTML looks at how IDs should structure OLM while implementing effective cognitive strategies to help learners learn efficiently (Sorden, 2012). These cognitive strategies are encapsulated in Mayer's FPI (see

manuscript 1). This is a key theory that can often be overlooked by an ID (Rudolph, 2017); however, participants from this study reported they employed four FPI when they designed and developed OLM, namely multimedia (cf. 3.3.6.3), signalling (cf. 3.3.6.5), pretraining (cf. 3.3.6.6) and segmenting principle (cf. 3.3.6.4). It is imperative for IDs to be knowledgeable about and employ FPI, or else their OLM "might interfere with the learning experience" (Rudolph, 2017:1). It is also important to be "*intentional* (making purposeful message design choices about visual presentation)" in crafting OLM to "achieve the foundational goals of encouraging and facilitating cognitive learning" (Ramlatchan, 2019:125).

3.4.2 SILENCES

The shift in focus from knowledge to skills is expressed in discourse and advocacy around a concept often called *21st-century skills*. These are the skills considered necessary to survive and thrive in a 21st-century economy of constant change and disruption (Reaves, 2019). Prominent 21st-century skills often mentioned in literature include complex problem solving, creativity, and digital and information literacy (Geisinger, 2016), as well as judgement, negotiation and cognitive flexibility (Gray, 2016).

Although 21st-century skills are part of the lexicon in HE (Kennedy & Sundberg, 2020), only one participant mentioned the importance of fostering 21st-century skills in the OLM she creates. In her (Participant #E) statement ("*working together will prepare them for the real world*") she pointed directly to interaction and collaboration. These are seen as two crucial soft skills and competences in the 21st century, indispensable for the contemporary work life (Dean, 2017; Fung, 2016).

Feedback mechanisms could also be identified as another silence, since it is not clear from participants' responses what type of feedback mechanisms they employ. In retrospect, I realised too late that this area needs probing and this calls for follow-up studies.

3.5 CONCLUSION

This study provided a deep understanding of how IDs translate quality into their design practices and what they regard as quality standards. Results showed that while a few IDs use standardised QGDs from their institution, most draw from various QGDs when they design and develop OLM. They also use these intuitively; not in a 'tick-off' manner when they design and develop OLM.

The most noteworthy insight from this study was that the practices of South African IDs working in HE is ingrained in theory. The experienced IDs who took part in the study seem to be very specific about the pedagogical and visual design principles they rate as quality indicators when they design and develop OLM. They take into account how students engage with the OLM when they employ visual design principles that reduce cognitive load. Also, South African HEI IDs exhibit dexterity in their roles as both curriculum designer and ID, while being responsive to the student as the 'consumer' of OLM. In particular they set out to design and develop OLM intentionally to overcome accessibility and inclusivity barriers.

While these findings make a unique contribution to the research considering IDs' perspectives on OLM quality, there are limitations. The study only involved experienced IDs, and findings cannot be transferred to the lesser experienced professionals. Hence a follow-up study should be undertaken to get a more generalisable sense of views and practices of IDs in South Africa.

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CHAPTER 4: STANDARDS FOR THE DESIGN AND DEVELOPMENT OF ONLINE LEARNING MATERIAL IN SOUTH AFRICA

4.1 INTRODUCTION

The main aim of my study was to derive a set of pedagogical and visual presentation standards to design and develop online learning material (OLM) suitable for South African higher education (HE) online learning (OL). As an interpretivist, I wanted to understand and interpret existing QGDs, but then also wanted to gain insight into how IDs in South Africa approach and translate quality in their daily practice. My focus was specifically on pedagogical and visual presentation standards of OLM.

Towards achieving this outcome, I wrote two manuscripts. In manuscript one I set out to extract principles for the pedagogical and visual presentation of the design and development of OLM (cf. 1.2; 2.1). I analysed 12 regularly used local and international QGDs (cf. 2.3.2) and based on that, identified 19 pedagogical (cf. 2.4.1) and 13 visual design principles (cf. 2.4.2) that are important in the design and development of OLM. I have depicted these principles in the PVP framework (cf. 2.5).

In the second manuscript, the aim was to understand *what* South African higher education institution (HEI) instructional designers (IDs) view as, and *how* they translate quality when they design and develop OLM (cf. 1.2; 3.1). Via semi-structured interviews, I gained insights from nine experienced South African HE IDs (cf. 3.3) on these two issues. I made sense of all that were shared by the participants through a COL (Figure 3-1) model, showing how South African IDs focus on human connectedness through social presence and teaching presence, as well as pedagogical principles (cf. 3.4).

As a conclusion to my dissertation, and the final contribution resonating with my main research question stated in the first chapter (cf. 1.2), I use the insights gained in each of the publishable manuscripts to synthesise standards relevant to the South African context that can be used to design and develop quality OLM. I propose a set of standards with comments on how to adapt it for the Southern African context, where applicable.

4.2 SET OF STANDARDS

As an interpretivist I wanted to gain insight into what constitutes quality in OL, including not only existing QGD, but also the voices of South African HE IDs. I therefore juxtaposed the information gained from the interviews (Chapter 3) with those of the PVP framework (Chapter 2) to derive a set of pedagogical and visual presentation standards for the design and development of OLM.

Findings showed that South African HE IDs' views on quality OLM mostly resonate with the PVP framework (Figure 2-4), although with adaptations. Figure 4-1 illustrates the standards from the PVP as well as additional standards that emerged through interviews with the participants (circled with red) based on what they perceive as important quality indicators. Also, of importance is to depict how specific standards relate with the COL model (cf. Figure 3-1, circled in turquoise).

Figure 4-1: Set of standards for the pedagogical and visual presentation for the design and development of OLM

In the diagram above, on the left-hand side in blue, are standards in terms of instructional design pedagogy. Curriculum design principles (constructive alignment, consideration of the credits/notional hours and qualification level) as well as building in human connectedness are deemed essential in addition to what is included in most QGDs, namely collaboration, higher-order thinking skills, collective knowledge and problem-based learning.

Similarly, the right-hand side in green provides a list of standards for the visual presentation of OLM. This is an expansion of what was provided in Figure 2-4, based on ID practices in South Africa, with inclusivity and accessibility added to multimodality, with personification and appropriate and efficient sequency deemed the essential standards.

Based on the insights gained in the study and a synthesis of the two manuscripts, I propose the set of standards in Figure 4-1 for South African Instructional Designers to use in their design and development practices.

It is however, imperative to contextualise any QGD (cf. 2.1), and thus also my own synthesised set of standards (Figure 4-1). In the section that follows, I thus put forward for consideration such contextualisation in the South African context.

4.3 CONTEXTUALISING THE STANDARDS

Contextualisation does not happen in a vacuum. Numerous factors influence, enable or hinder these processes (Leite, Fernandes & Figueredo, 2018). In my view, it would not be reasonable to mention contextualisation without also considering the challenges thereof. The inclusion of challenges in implementing a specific standard might assist IDs to mitigate around it and address it proactively.

In the two tables that follow, I thus provide an expansion of each standard included in Figure 4-1, also to provide a description of the standard, and examples of how IDs apply it. I then make suggestions with regard to possible contextualization for the South African HE landscape and include (highlighted in blue) the challenges pertaining to implementing the contextualised pedagogical standard (Table 4-1) and the visual presentation standards (Table 4-2).

Table 4-1: Contextualised pedagogical standards for OLM in South Africa

Standard	Description	ID practice	Contextual considerations & challenges
Cultivate collaborative learning in the design and development of OLM. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.4.2)	Learning is promoted when students interact with one another and with the facilitator.	• Employ a variety of communication technologies to create collaborative OLM, e.g. peer discussion forums on LMS, Google Jamboard, Padlet.	• SA HE students come from a social environment where they are used to learn in a collaborative fashion; thus, this principle might be easier to apply than others; although difficult in large classes. • Be cognisant of paid collaborative platforms which students might not be able to afford. • IDs have restricted options in selecting the most appropriate collaborative platform due to institutional red tape. • Proper OL requires 'savvy' facilitators to monitor and respond (appropriately) to online discussions. • Asynchronous discussions are time consuming for the facilitator to monitor and mark. • First-year students require orientation and preparation into online behaviour, explaining the purpose of discussion. • Online collaborative learning does not happen spontaneously. It requires careful planning, which might be time consuming.
Foster higher-order thinking skills in the design and development of OLM. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5;	Students are required to understand how to analyse and evaluate complex information, categorize, manipulate and connect facts, big-picture thinking,	• IDs scrutinise content to identify opportunities to incorporate research activities, reflective activities and/or debates. • Use specialised authoring tools to	• Draw from arts-based inquiry linked with indigenous ways of thinking and knowing, e.g. instead of writing a reflection, ask students to take a photo of an artefact or video or record a dance; express in a poem or a song.

Standard	Description	ID practice	Contextual considerations & challenges
3.3.5.4)	problem solving, and develop insightful reasoning.	create tailormade scenarios.	• Reflective activities are useful to foster this standard, but refrain from synchronous modes, since students will feel pressured to respond immediately • Asynchronous mode provides greater opportunity for students to develop a more complete answer • Authoring tools are expensive and requires skilled IDs
Create opportunities for students to build knowledge together when designing OLM. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.4.2)	Learning is promoted when students share an understanding of a problem and 'make meaning' together.	• Design OLM, which allows students to express their opinions and argumentations, while also responding to their peers. • Make use of discussion forums' 'threaded' connections to enable a response to be attached to the particular comment that prompted the response,. defending their conclusions and building on one another's ideas.	• Incorporate local and indigenous knowledge and student experiences. • Allow space for students to bring their own examples and resources; share personal experiences, e.g. bring articles from local newspapers. • Rely on asynchronous communication tools that allow students to reflect, participate and develop multiple viewpoints in a non-threatening way.
Build in opportunities for problem-based learning when designing OLM. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.5.1)	Students acquire knowledge and skills by solving authentic problems in their own contexts and in their own way (open-ended problems).	• IDs should create opportunities in OLM where students can solve authentic and current problems. • The focus should be on the learning of concepts and principles opposed to direct presentation of facts. • IDs look for controversial areas where students are required to make reasoned decisions and defend them.	• Create opportunities for students to provide or invent problems themselves. • Give information in subsequent stages as students work through the problem (scaffolding).

Standard	Description	ID practice	Contextual considerations & challenges
			• Our own assumptions about our students' contexts might be a barrier to implement this standard, e.g. what is seen as real-world problems from the student's point of view? Are problems we know and read about representative of students' real lives or is it one-sidedly Western? • Capacity (lack of savvy facilitators) to facilitate debates.
Follow curriculum design principles when OLM is designed. (cf. 3.3.3)	Follow curriculum design principles in the design and development of OLM.	• Ensure alignment of outcomes with content and assessments (cf. 3.3.3.1). • Pitch OLM on the appropriate cognitive level (cf. 3.3.3.3). • Allocate time correctly to complete OL programme (cf. 3.3.3.2).	• Time constraints challenge IDs to perform proper curriculum design. • Academics are not skilled in curriculum-design principles.
Build in human connectedness in the design and development of OLM. (cf. 3.3.4)		IDs can do it in the following ways: 1. Establish TP (cf. 3.3.4.1) 2. Personalise OLM (cf. 2.4.2; Table 2; 2.5; Figure 4) • Use a conversational 'tone of voice' when IDs write text on screen. • Use appropriate bridging text and clear instructions. • Use a human voice instead of artificial/machine voice for voice-overs, e.g. in	• To employ this standard properly requires intentional design from the onset. • Requires skill to write 'conversationally', create appropriate bridging text and clear instructions. • Costly and time-consuming to do professional voice-overs. Also, should be done in the same voice.

Standard	Description	ID practice	Contextual considerations & challenges
		PowerPoints and videos. 3. Build in collaborative activities (cf. 3.3.4.2)	
Activate prior knowledge in OLM. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.5.2)	Students activate existing knowledge on the topic or their memory of an experience as a foundation for new knowledge to hook onto.	• Intentionally design LAs where students connect new knowledge with what they know. • Commence a lesson with OLM that evokes high curiosity or an emotion among students. • Design interesting, content-related icebreakers.	Students should be encouraged to share traditional knowledge and their own experiences.
Promote active learning when designing online LAs. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.5.5)	The student needs *to do something* to engage in the learning process rather than simply being passive and accepting knowledge.	• Select specific and appropriate authoring tools to create OLM that elicits mental engagement from the student.	• Countless free technology applications are available that integrate well with main LMS to create interactive OLM, but institutional red tape hinders the use of free applications. • Authoring tools to create interactive OLM are costly and need skill to operate.
Build in LAs for students to apply the knowledge gained from the learning experience. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.5.3)	Learning is promoted when students apply their newly acquired knowledge and/or skill to solve problems.	• IDs craft tailormade LAs which allow students to apply what they have learnt.	• LMS is limited to implement this standard. • IDs need expensive authoring tools (software) to create tailormade OLM. • Time consuming. • Requires high level of skill from both SME and ID.
Provide thorough and prompt	Learning is promoted when students are given expert and timeous	• Create OLM with automated feedback, e.g. build in questions	

Standard	Description	ID practice	Contextual considerations & challenges
feedback to students. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5)	feedback on their performance.	with on-screen feedback. • Use feedback tools on LMS.	• Time-consuming and expensive authoring tools needed. • At this stage feedback tools available on LMS are basic and limited. • Large classes make it impossible for individualised and thorough feedback.
Foster deep learning by crafting OLM that allows for a deeper level of information processing. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.5.4)	Learning is promoted when students have the opportunity to analyse, apply prior knowledge, synthesize information, design and create solutions.	• Incorporate reflective LAs.	• Should be asynchronous to allow ample time to reflect; students should not be pressed to answer/reflect immediately (as in the case of synchronous settings).
Provide a variety of OLM. (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.5.6)	Learning is promoted when a variety of OLM is included in the learning journey.	• IDs craft a good balance between active (doing) and passive (watching or reading) OLM.	• LMSs offer a limited selection to create active OLM. • Due to high cost, institutional capacity and restrictive timeframes, it is not always doable to create active learning. activities.
Build in checkpoints/ practice activities (cf. 2.4.1; Table 2-1; Figure 4-1; 2.5; 3.3.5.7)	Administer LAs at different points throughout a learning experience; not to 'gauge' as much as to build confidence and enhance learning to gauge student progress and enhance learning.	• Include short LAs such as multiple choice, mix and match, crossword, interactive video. • Craft-embedded prompts to which the student responds.	• IDs need specialised authoring tools to create these, but due to cost, skill, capacity and time restrictions not always possible.

The pedagogical standards set out in Table 4-1 are synthesized from recognised local and international standards (Chapter 2) as well as best practices by South African IDs (Chapter 3). For instance, the first standard mentions the cultivation of collaborate learning. IDs can promote this by designing an OLM which encourages students to interact with one another and their facilitator. IDs can do this by employing an LMS as well as a variety of technological applications such as Google Jamboard and Padlet. However, while South African students come from a social environment where they are used to learning collaboratively, large numbers of students (per module) might hamper the implementation of this standard. IDs must be cognisant of paid collaborative platforms, restrictions on software licensing and online facilitating skills. In the same manner, the second standard, namely to foster higher-order thinking skills, could be done by incorporating research based and reflective LAs. To do so, IDs would typically use specialised authoring tools to craft scenarios that require of students to evaluate complex information, manipulate and connect facts, and develop insightful reasoning. However, to create effective scenarios with authoring tools takes time, effort and skill, and authoring tools are expensive.

The next table (Table 4-2) illustrates the contextual considerations for visual presentation in the compilation of OLM. It is again a synthesis of recognised local and international standards (Chapter 2) as well as best practices by SA IDs (Chapter 3). It is thus an extension of the green part of Figure 4-1 in that it gives the standard, explains what it is (description), as well as how IDs apply it. In the (far right) column I make suggestions with regard to possible contextualization for the South African HE landscape. I also include (highlighted light green) the challenges pertaining to implementing the contextualised visual presentation standard.

Table 4-2: Contextualised visual presentation standards for OLM in South Africa

Visual design Standard	**Description**	**ID practice**	**Contextual considerations & challenges**
Apply the multimodality principle where appropriate. (cf. 3.3.6.3; 2.5; Table 2.2; Figure 4-1)	Students learn best from words and pictures than just from words alone.	• Be flexible in the design and development of OLM by offering variety, e.g. audio and infographic. • Provide options for accessing information, e.g. visit article directly on the site or download the PDF.	<u>Graphics:</u> • To be used as a means to enhance learning; not to 'prettify'. • Use animated graphics sparingly, especially when you consider students with limited attention spans or who are differently able. • Restrict pixels in graphics to minimise cost of data. <u>Videos:</u>

Visual design Standard	Description	ID practice	Contextual considerations & challenges
		• Accommodate students' learning styles. • Apply visual presentation principles best practices, e.g. Mayer's Multimedia Principles	• Converting videos to YouTube were possible, since the latter automatically compresses video size to adapt to the user's internet speed; thereby helping students with limited bandwidth. • Use authoring tools that allow videos to be embedded, meaning no extra data cost for students to access and watch videos. • Provide text transcripts for all videos to enable students to read easily what transpires if streaming the video becomes impossible due to bandwidth. • To craft video and graphics, IDs need to work with a dedicated graphic designer and video production team which takes time and skill and is costly.
Design and develop inclusive and accessible OLM. (cf. 3.3.7; Figure 4-1)	Consider and meet students' identity, needs, skills, knowledge and abilities in the design and development of OLM.	• Consider sight-impaired students in the design and development of OLM by following best practices, e.g. include audio. • Consider hearing-impaired students in the design and development of OLM by offering transcripts for video. • Allow for closed captions with the incorporation of videos but make it optional. • Ensure neutrality vis-a-vie gender and religion. • Ensure a balance in the selection of graphics e.g. men vs. women, African vs. European, young vs old. Use graphics representative of the target audience (students).	• Use LMS and authoring tools that offer uncomplicated interface to ensure intuitive navigation. • Prioritize mobile-first design strategies to promote easy accessibility, as many students in low-bandwidth areas lack laptops or high digital literacy and solely depend on the most affordable phones. • Employ asynchronous communication tools that are more conducive to eliciting equal participation. • Encourage the concept of Translanguaging (e.g. make notes in mother tongue and respond to activities in English). • To craft diverse and inclusive OLM that are representative takes time and effort, and therefore is costly. • Graphic repository sites (currently available) are lacking graphics that are inclusive and diverse. representative.

Visual design Standard	Description	ID practice	Contextual considerations & challenges
Sequence OLM appropriately and efficiently. (cf. 3.3.6.2; Table 2.2; Figure 4-1)	Learning is promoted when OLM is appropriately and efficiently ordered so that students can see a relationship between it.	• IDs must sequence OLM in an appropriate, efficient and coherent manner. • Employ bridging text to link LAs with one another as well as with resources.	• No comment
Employ the signalling principle where appropriate. (cf. 3.3.6.5; Table 2.2; Figure 4-1)	Students learn better when essential material is highlighted.	• Use bold and bigger fonts. • Underline important information. • Use appropriate headings • Use prompting graphics such as arrows. • Use icons	• Students should be able to identify with, e.g., icons
Use an appropriate font and colour in the development of OLM. (cf. 3.3.6.1; Table 2.2; Figure 4-1)	Use a colour scheme and font so that optimal learning can take place.	• Use fonts and co lour consistently throughout: ❖ No more than 2 different fonts per screen ❖ No more than 6 primary colours in a design • Use the correct font size (10 point or higher). • Use upper and lower case. • Use sans-serif fonts such as Verdana and Arial rather than serif fonts to improve readability.	• Refrain from 'funny' fonts that might not download on students' device. • The use of colour should adhere to accessibility principles e.g. refrain from using red and green together; high contrast between font and background.
Segmenting Standard (cf. 3.3.6.4; Table 2.2; Figure 4-1)	Students learn better when information is presented in segments, rather than one long continuous stream.	• IDs 'chunk' information into 'digestible' sizes – roughly 3 ideas per paragraph/slide.	• No comment
Pre-training standard (cf. 3.3.6.6; Table 2.2; Figure 4-1)	Students learn more efficiently if they already know some of the basics, e.g. terms, definitions, concepts.	• Provide a list of abbreviations. • Explain difficult terminology beforehand. • Provide a learning pathway at the onset of a learning experience.	• This standard pertains especially to first-year students in that IDs have to consider their digital competency needs: • Give explicit instructions and guidelines with regard to technical requirements and how to access and use technology tools.

Visual design Standard	Description	ID practice	Contextual considerations & challenges
			• Include 'how to' tutorials (video format) on how to navigate on Blackboard.

The pedagogical standards set out in Table 4-2 are synthesized from recognised local and international standards (Chapter 2) as well as best practices by South African IDs (Chapter 3). For instance, the first standard requires of IDs to apply the multimodality principle, where appropriate. IDs should be flexible in the design and development of OLM by offering variety (e.g. audio, video and graphics), while also providing options for accessing information (e.g. visit article directly on the site or download the PDF). IDs should, however, resist using graphics to contribute to the aesthetic appeal to enhance learning and should only be used as a means to enhance learning. Also, animated graphics should be used sparingly, especially when one considers students with limited attention spans or who are differently able. One should also restrict pixels in graphics to minimise the cost of data. The same goes for the second standard, namely to design and develop inclusive and accessible OLM by considering students' identities, needs, skills, knowledge and abilities. However, to craft diverse and inclusive OLM that is representative takes time and effort and is therefore costly.

4.3.1 DISCUSSION

To conclude, the above derived set of standards, summarised in Figure 4-1 and detailed in Table 4-1 and 4-2, is underpinned by sound learning theory since the PVP framework were derived from 12 established QGDs (cf. Figure 2.4) as well as South African IDs' best practices, which in return clearly resonates with the CoI model (cf. Figure 3.1 & 4.1). According to Aluko. Krull and Mhlanga (2021: 9), high-quality learning design is indeed entrenched in theory and this suggests that my set of standards may be used as a "mechanism" for quality assurance of instructional design in HE OL. The authors add that such a mechanism be implemented proactively (in the design phase already) and not as an afterthought.

It is neither simple nor easy to contextualise instructional design standards, yet Martin et al. (2017) emphasise the importance of such. A myriad of challenges make it difficult to implement them successfully. Contextualisation of these standards should be seen as an ongoing challenge and calls for more research.

4.4 PERSONAL REFLECTION

> *There will come a time when you believe everything is finished. That will be the beginning - Louis L' Amour, n.d.*

I have come to realise that doing research is a journey and not a destination. This master's degree is only the first step in my journey as a researcher and I know now it is not a quick process! Looking back, it taught me to be patient, but it also 'forced' me to grow in quite a few ways.

4.4.1 AS A RESEARCHER

As a researcher, I have refined my skills in critical reasoning, research methodology and overall writing, which in the end taught me to strive for academic excellence. I see these skills as transferrable and invaluable, since I will be able to apply them in future academic research endeavours, which I am very enthusiastic to engage in. I am also more confident and experienced in conducting interviews than I was at the onset of this project. With regard to analysing data, I reverted to my inherent learning style, which is visual, and used paper and pen to depict my findings (see Figures 4-2 and 4-3 below).

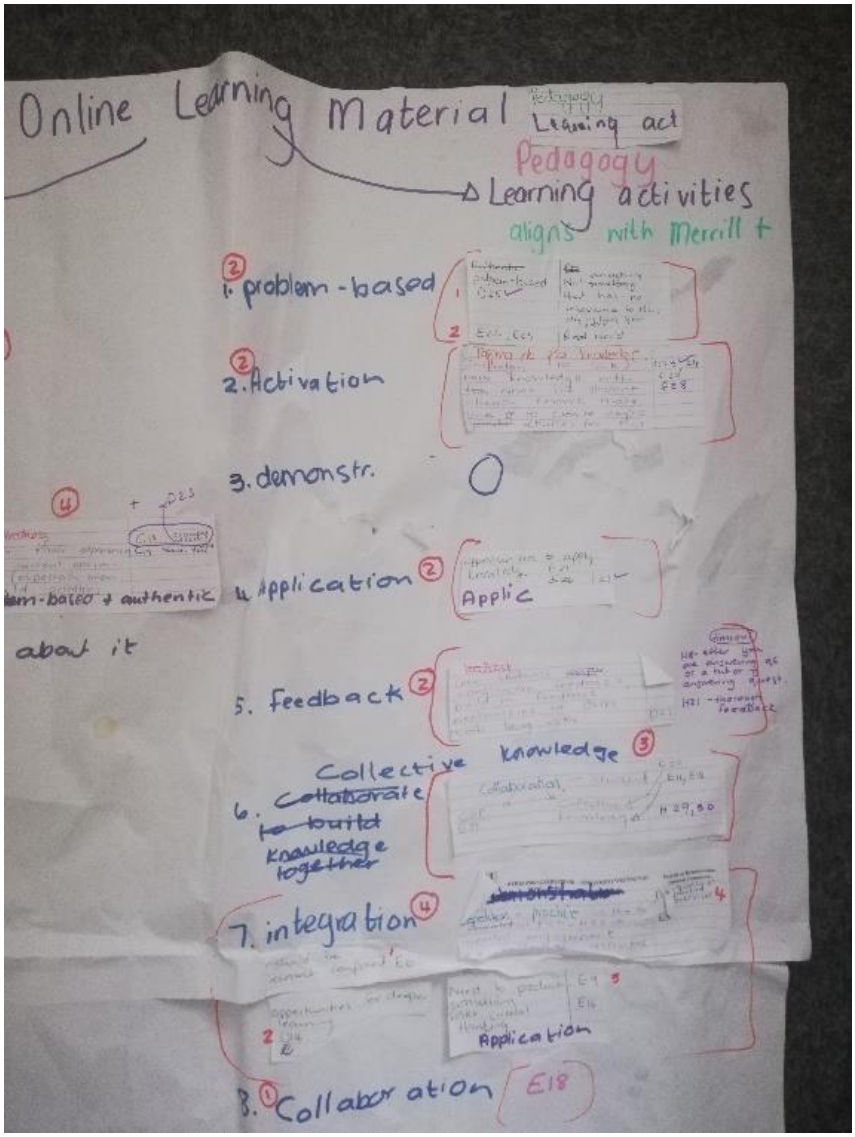

Figure 4-2: Photo of how I developed my themes for pedagogical principles

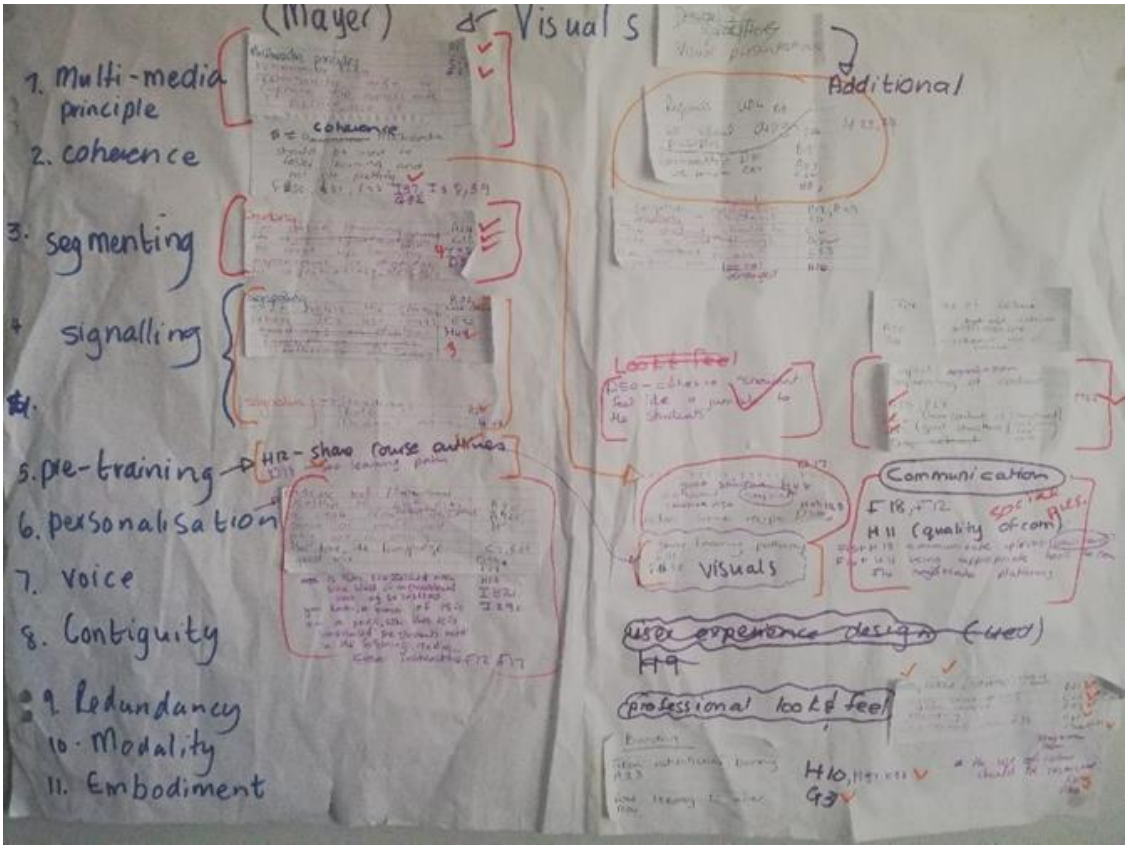

Figure 4-3: Photo of how I developed my themes for visual presentation principles

Figures 4-2 and 4-3 depict the 'messy' process I went through to display my themes visually. Initially, I identified themes from the transcripts, but these were then refined through a process of discussion with my supervisor, who challenged me to go beyond the obvious.

4.4.2 AS AN INDIVIDUAL

As an individual, this study has 'forced' me to do a lot of introspection to discover where I situate myself in this thing, called research. At times I felt overwhelmed when I realised that I still have so much to learn, but then thought of Aristotle (Anon., 2019) when he had similar thoughts:

> *"The more I know, the more I know that I don't know."*

His words gave me the reassurance to know it is normal to feel like this, but also humbled me to the idea that I am merely standing on the shoulders of giants and should grasp every opportunity that comes my way to learn. I furthermore realised that to do research takes a lot of intrinsic motivation, and I am fortunate to have a lot of that. Also, by putting on a

decolonising lens in my personal capacity, made me more aware of my own privileges and even more sensitive to issues of inequality, diversity and accessibility.

4.4.3 AS AN INSTRUCTIONAL DESIGNER

Figure 4-4: A depiction of how I view my work as an ID (Anon, Pinterest, n.d.)

The most profound learning curve lies in my professional capacity as an ID. Although I come from a curriculum design background, four years ago, instructional design was new to me when I landed this job. My research question was sincerely born from my lack of instructional design knowledge at the time; hence my pursuit to know *what* constitutes quality OLM. The effect that the journey to find answers to this initial research question had on my daily work was serendipitous! As I progressed with my research, I could practically apply the pedagogical and visual design principles in my daily practices. This gave me an enormous feeling of satisfaction and confidence, and I experienced how research grounded my work in what is classified as a "support" (non-academic) position. Today it still keeps propelling me forward in my quest for excellence in instructional design. I will forever advocate the incorporation of *both* pedagogical and visual presentation principles in the design of OLM.

As was the case with my personal realisations, in my professional role, I also gained more insight into the South African HE student profile in terms of diversity and equity by adopting a decolonised lens. We (HE) can no longer exclude traditional ways of thinking, learning, knowing and doing; the onus rests with the individuals responsible for the design of online learning (IDs, among others) to decolonise OLM. Unfortunately, this is easier said than done.

I know that fundamental issues remain in South African HE to establish sustainable and locally responsive online learning in the midst of digital inequalities, unreliable bandwidth and electricity grid, among other barriers. Furthermore, to balance instructional design quality with these challenges is even more challenging. I do believe that we (IDs) can make some difference by promoting critical, culturally appropriate and equity sensitive OLM by making small changes in the OLM we create.

I agree with Davis and Frederick (2020:158) when they say that IDs carry a "moral burden" to "mitigate societal inequalities" when they design OLM. They feel IDs are in a position to design online learning programmes to set students up for success amidst a society "where the benefits of earned degrees are not rewarded to everyone equally regardless of race, gender, socioeconomic status, sexual orientation and abilities" (Davis & Frederick, 2020:158).

4.4.4 On the topic of decolonisation

I know now that it takes intentional instructional design to create effective and engaging OLM, and even more so to decolonise OLM. This in return calls for time, effort, money and skill. This has led me to think that there is a dichotomy 'brewing', since we (HE) experience this push to decolonise on the one hand, but the reality is that we sit with lack of institutional capacity, high cost and time constraints, which hamper the implementation thereof.

Through a discussion with my supervisor, I came to realise that decolonisation should not be viewed simply as a binary tension, but rather as pluriverse, where the North, East, South and West (as a figurative speech) coexist in a space of plural meanings and connotations, where differences in terms of being and doing should be appreciated. In a pluriverse space, design practices are situated in plurality: participatory, socially oriented, and open ended (Escobar, 2018). I have come to adopt Escobar's (2018) radical way of thinking that a designer – and this accounts for IDs as well – should welcome ethnographic, participatory and collaborative practices when they create OLM.

4.4.5 Final reflection

Although the learning curve was steep, I enjoyed this journey. I would never have been able to complete this research without the mercy and grace of God, the Almighty. I am thankful for the mentorship I had from Prof Lynette Jacobs and Mr Johannes Moller and I appreciate new collegial friendships made with the IDs I interviewed. Overall, I feel that this has been

both a valuable and enjoyable experience and I now feel prepared and excited for my upcoming academic and professional years.

4.5 LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

A first limitation of this study is that the small participant number limits the ability to generalize results. It was not my intention to infer, yet while my findings are surely useful indications of quality in OLM, they have yet to be confirmed by more large-scale studies; thus, calling for future research on an in-depth analysis of the standards and how they are implemented.

A second limitation of this study is that the quality of OLM was viewed only from the perspective of one group of stakeholders, namely the IDs. Students and academics are also regarded as two important key stakeholders who could evaluate the quality of online programmes (Badali et al., 2018).

Thirdly, my study was obviously influenced by the lenses I wore. Should I have chosen any other lens, it most probably would have influenced my interpretation of data. Although this is the case for all studies, where a researcher decides on a particular lens, other researchers might choose different lenses and might come up with a complete different set of standards.

In addition, in the first manuscript (Chapter 2) I was able to suggest a level of importance based on how often the standard appeared in QGDs. As my second manuscript focuses on understanding the elements of instructional design, I did not enquire whether more emphasis is placed on certain standards than on others. Now that I do have my proposed set of standards, I intend to embark on a follow-up study. Also, since this study did not touch on online assessment, another avenue for research might be in the design of robust assessment methods that accurately gauge learning outcomes in online environments. Research could focus on authentic assessment strategies that align with the unique challenges and strengths of the Global South's higher education landscape.

Nevertheless, I do believe that I make a contribution to the discourse on quality standards for instructional design, and the practice of this specialist area.

4.6 Conclusion

In my study, I elicited non-negotiable pedagogical and visual presentation standards for the design and development of OLM. It also provided a basis for understanding South African IDs' perspectives on OLM quality, and how they translate quality into their daily design and development practices. The results showed that IDs define OLM quality based on established rubrics, frameworks and models. Additionally, IDs consider accessibility and inclusivity as pivotal for OLM quality and could provide various examples of how they apply UDL principles in their own work.

Given IDs' intuitive use of rubrics, checklists, guidelines and models, the results suggest incorporating quality standards into future ID training programs. From a practical perspective, the South African HE ID Model created for this study may serve as a useful tool for IDs to promote and evaluate the work they do.

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APPENDICES

APPENDIX A: ETHICAL CLEARANCE

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA
UFS UV

GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

07-Dec-2021

Dear Ms Isabella Du Preez

Application Approved

Research Project Title:
Instructional design standards for online learning material at South African higher education institutions

Ethical Clearance number:
UFS-HSD2021/1617/21

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

Dr Adri Du Plessis
Chairperson: General/Human Research Ethics Committee

Dr Adri du Plessis
Digitally signed by Dr Adri du Plessis
Date: 2021.12.08 07:48:40 +02'00'

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APPENDIX B: GATEKEEPER'S PERMISSION REQUEST

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA
UFS UV

APPENDIX 2

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Dear (institution's name)

I am doing research and hereby request permission to conduct research at (institution's name).

TITLE OF THE RESEARCH PROJECT

Instructional design standards for online learning material at South African higher education institutions.

PRINCIPLE INVESTIGATOR / RESEARCHER(S) NAME(S) AND CONTACT NUMBER(S):

Isabella du Preez 2011020332 *082 469 1034*

FACULTY AND DEPARTMENT:

Education
Higher Education Studies

STUDYLEADER(S) NAME AND CONTACT NUMBER:

Prof Lynette Jacobs; 0712521
051 505 1289

WHAT IS THE AIM / PURPOSE OF THE STUDY?

The main aim of this study is to understand how instructional designers approach and execute quality principles when they design and develop online learning material for asynchronous learning programmes at higher education institutions

WHO IS DOING THE RESEARCH?

As a novice instructional designer at UFS, I am interested in the quality of online learning material, my exact field of work. Since our profession is still very young and we mostly have quality standards from the Global North to guide us in our design practices, I would like to understand how we approach and executing quality in our own unique context here in South Africa. The research project is done as part of my studies at the University of the Free State.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This study has received approval from the Research Ethics Committee of UFS. A copy of the approval letter can be obtained from the researcher.

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UFS UV

Approval number: UFS-HSD2021/1617/21

WHAT IS THE NATURE OF PARTICIPATION IN THIS STUDY?

Participants will be expected to answer questions during a semi-structured interview during a time that suits them; or after hours if they prefer. Mostly open-ended questions will be asked to find out how they approach and execute quality principles in specifically, the pedagogical and visual components of the online learning material that they design. Please find a copy of the interview guide attached for your perusal. The duration of the interview would most likely not exceed 30 minutes.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

Participants will gain no personal benefit by participating in this study, but their input might contribute to the wider field of instructional design, as an emerging field of practice in the South African Higher Education landscape.

WHAT IS THE POTENTIAL RISKS TAKING PART IN THIS STUDY?

none

WILL THE INFORMATION BE KEPT CONFIDENTIAL?

If participants agree to participate in my research project, their personal detail will not ever be revealed to third parties. Their names will not be recorded anywhere during the interview, and no one will be able to connect them to the answers they give. Their answers will be given a fictitious pseudonym, and will be referred to in this way in the data of any publication(s), or other research reporting methods such as conference proceedings that may derive from this study. Only myself will have access to the data. Their answers may be reviewed by people responsible for making sure that research is done properly, including my supervisors, and members of the Research Ethics Committee.

HOW WILL THE INFORMATION BE STORED AND ULTIMATELY DESTROYED?

Hard copies of participants' answers will be stored by the researcher for a period of five years in a locked filing cabinet at her office on campus; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After five years, hardcopies will be shredded.

WILL THERE BE PAYMENT OR ANY INCENTIVES FOR PARTICPATING IN THIS STUDY?

Participants will receive no payment, nor will they gain financially in any way. I do not foresee any inconvenience, except for the participants' time that they have to sacrifice. I do not foresee any risks of harm or side-effects that participants may suffer from.

205 Nelson Mandela Drive, Park West, Bloemfontein 9301, South Africa
P.O. Box 339, Bloemfontein 9300, South Africa, T: +27(0)51 401 9111, www.ufs.ac.za

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA
UFS UV

HOW WILL THE INSTITUTION / ORGANISATION / COMPANY BE INFORMED OF THE FINDINGS / RESULTS OF THE STUDY?

If participants would like to be informed of the final research findings, please contact Isabella du Preez on 082 469 1034 or dupreezim@ufs.ac.za. The findings will be accessible once the final dissertation is marked. Should you require any further information or want to contact the researcher about any aspect of this study, please contact Isabella du Preez at dupreezim@ufs.ac.za. Should you have concerns about the way in which the research has been conducted, you may contact Prof Lynette Jacobs at jacobsl@ufs.ac.za and/or 051 5051289.

Yours sincerely

Isabella du Preez

205 Nelson Mandela Drive, Park West, Bloemfontein 9301, South Africa
P.O. Box 339, Bloemfontein 9300, South Africa, T: +27(0)51 401 9111, www.ufs.ac.za

APPENDIX C: EMAIL TO PARTICIPANTS.

EMAIL INVITATION TO INSTRUCTIONAL DESIGNERS AT HIGHER EDUCATION INSTITUTIONS

Good day colleagues,

I would like to invite you to participate in my research project, which is concerned with instructional design standards for online learning material at South African higher education institutions. Online learning material in this context, refers to all the *resources* and *learning activities* that instructional designers typically use to assemble an online learning programme.

I would like to understand how you approach the quality of online learning material and, more specifically, how you execute quality principles in the pedagogical and visual components of the online learning material that you design.

Why am I doing the research project?

The research project is done as part of my studies at the University of the Free State. I am confident that the information we gather would help improve the field of instructional design in the higher education landscape. Context-specific instructional design standards can be used by novice instructional designers as a point of departure in their design practices. In addition, higher education institutions can adapt or adopt such standards as guidance to design and develop quality online learning material.

What will you have to do if you agree to take part?

1. Reply on this email with the signed consent form (attached).
2. I will contact you to schedule a convenient time for us to meet (online). This interview should not take longer than 30 minutes.
3. The interview will be recorded, and a copy of the transcription will be sent to you should you want to give additional comments on it afterward.

Will your participation in the project be confidential and anonymous?

If you agree to participate in my research project, your personal detail will not ever be revealed to third parties. Your responses and input with regard to the interview are used solely for this research project. Pseudonyms will be used to ensure anonymity and institution's names will not be revealed.

You are not obliged to participate in this research project; you have been approached as an instructional designer in the higher education field with the view that you might be interested in taking part; this does not mean you have to. You will not be renumerated if you participate in this study.

Reminder: You always have the right to withdraw your consent as well as the right not to answer any or some questions during the interview.

Kind regards

Researcher: Isabel du Preez, University of the Free State dupreezim@ufs.ac.za

Supervisor: Prof Lynette Jacobs, University of the Free State Lynette Jacobs jacobsl@ufs.ac.za

Co-supervisor: Johann Möller, |University of the Free State MollerJJ@ufs.ac.za

APPENDIX D: CONSENT FORM

CONSENT FORM

Title: Instructional design standards for online learning material at South African higher education institutions.

Researcher: Isabella du Preez

I volunteer to participate in the research project conducted by Isabel du Preez from the University of the Free State. I understand that this research project is designed to study instructional design standards for online learning material at South African higher education institutions.

As a staff member at _____, I understand that I am being invited to take part in an interview. I agree to the following terms and conditions:

- My input and participation in the interview are voluntary.
- I will receive no renumeration when participating in this research project.
- The interview will take approximately 20 minutes to complete. I do not have to complete all the questions if I do not want to.
- If I participate in the interview it will be recorded. If I choose not to be recorded I must make this clear before the interview commences.
- If I feel uncomfortable in any way during the interview I have the right to decline to answer any question or to exit the session.
- I understand that the researcher will not identify me or my institution by name in any reports using the information obtained from the interview. My confidentiality as a participant of this research will remain secure.
- If I choose to be interviewed, I have the right to view and comment on the transcribed interview data before the findings are analysed.
- My personal detail will never be revealed to third parties.
- I have read and understand the participant information sheet provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

By signature I hereby agree to the terms and conditions and to participate in the **interview** for this study.

Name _____

Signed _____

APPENDIX E: INTERVIEW QUESTIONS

INTERVIEW GUIDE

The purpose of this interview is to gain a better understanding of how instructional designers approach and execute quality when they design online learning material. The answers obtained during the interview will be used in a Master's dissertation. This will involve some or all of the answers being shared with the relevant supervisors of the research project. This will be an informal, conversational interview and will take approximately 20 minutes to conduct. The interview will be recorded and transcribed. Participants will also have an opportunity to provide any additional comments in writing afterwards which could be sent to the researcher at dupreezim@ufs.ac.za.

Terminology

- **Online learning**: Within the context of this research project refers to asynchronous learning in a distance education space, where the OLM becomes the lecturer's voice.
- **Design and development:** the decisions taken when instructional designers plan and compile online learning material
- **Online learning material:** includes two components, namely learning activities and resources. Learning activities relate to how students learn, thus address pedagogy. Examples include reflective activities using Google Docs, collaborative learning using discussion forums, completing an Articulate Storyline activity. Resources relate to the content and information which are provided for the learners, such as screen on text, PDFs, Powerpoint, videos.

Questions

Ease in questions/introductory questions	Will it be okay with you if I record our interview? Before I start asking questions, do you have any questions for me? How long have you been working as an instructional designer? Do you enjoy what you are doing? Do you have formal training in instructional design? Do you design learning material for asynchronous or synchronous environments?

Technical question	Does your institution have quality standards to assist you with your job? (say checklists, a guide or rubric) • If they do, what are they? • How do you use them? (do you keep a checklist beside you and do a tick-off exercise; are they engrained in what you do and you do it without thinking) • Do you deem them useful? If they don't, • do you use any other standards, guidelines or checklists? • What are they? • Do you deem them useful?
Reflective questions	Tell me what you understand under the term 'quality of online learning material'? If you have to assess someone's learning material in terms of learning activities (pedagogy), what do you look for? What are important quality indicators for you? If you think of how you present information to students, what are visual design elements that you follow?

APPENDIX F: LANGUAGE EDITING LETTER

CORNELIA GELDENHUYS

✆083 2877088
corrieg@mweb.co.za

14 May 2023

TO WHOM IT MAY CONCERN

Herewith I, **Cornelia Geldenhuys (ID 521114 0083 088)** declare that I am a qualified, accredited language practitioner and that I have edited the final copy of the following master's dissertation:

INSTRUCTIONAL DESIGN STANDARDS FOR ONLINE LEARNING MATERIAL AT SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS

by

Isabella du Preez

All changes were indicated by track changes and comments **for the author to verify, clarify aspects that are unclear, make the necessary adjustments and finalise.** The editor takes no responsibility in the instance of this not being done. The document remains the final responsibility of the author.

.....
C GELDENHUYS
MA (Lin) cum laude, MA (Mus), BA Hons (French), HED, HDL, UELM

Accredited member/Geakkrediteerde lid, SATI, Membership/Lidmaatskap: 1001474 (A/E-E/A)
Full member/Volle lid, Professional Editors Guild (PEG, Membership GEL001)
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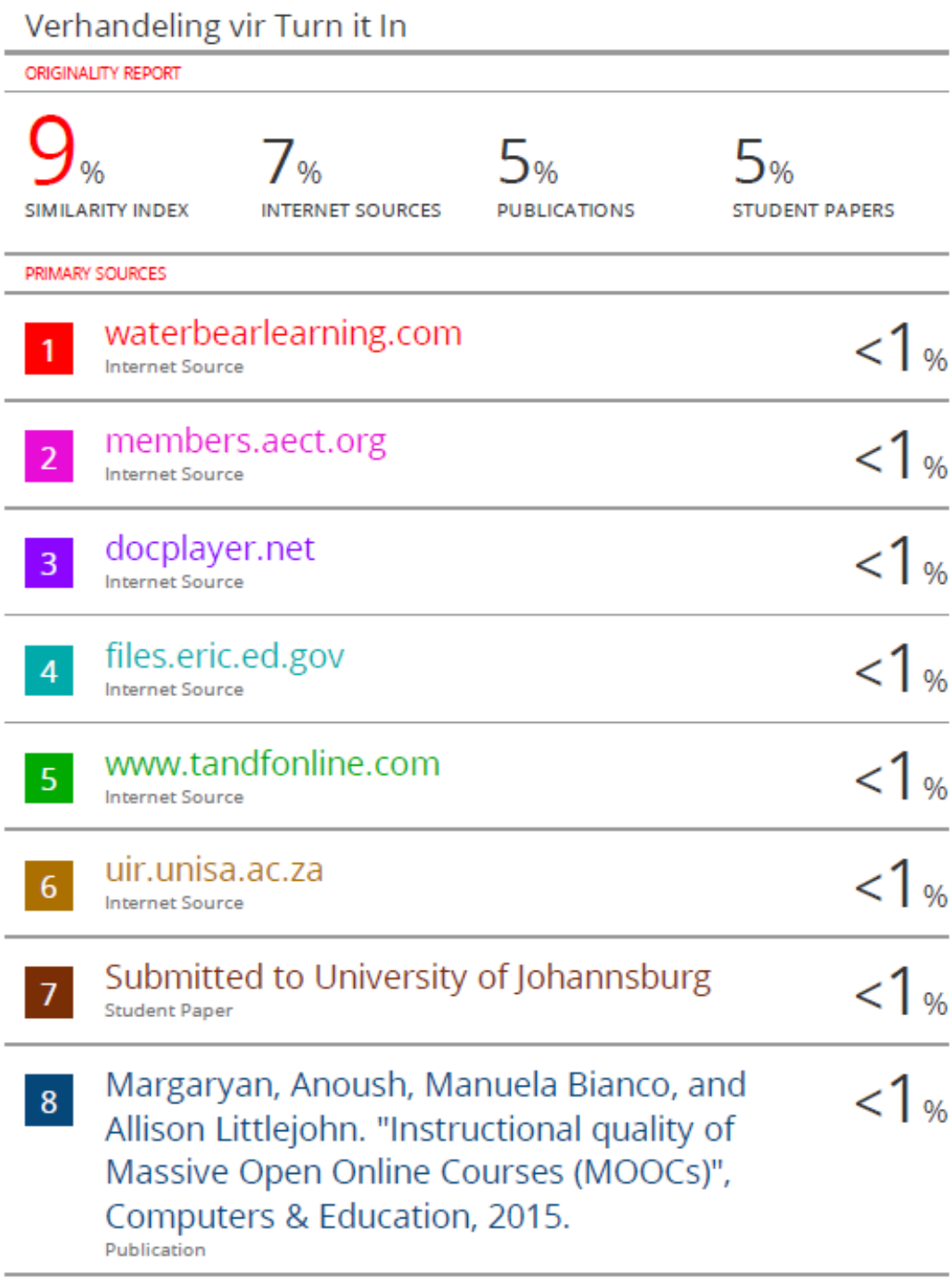
APPENDIX G: TURNITIN REPORT



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ORIGINALITY REPORT

9%	7%	5%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

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